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NEXT ANNUAL MEETING
JUNE 23, 24 and 25, 1909.
DETROIT, MICH.

ASSOCIATION

OF

Railway Telegraph Superintendents

PROCEEDINGS

OF THE

Annual Meeting Held at Montreal

JUNE 24th, 25th and 26th, 1908.

CONSTITUTION, BY-LAWS, LIST OF MEMBERS, ETC.

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THE ASSOCIATION

OF

Railway Telegraph Superintendents

Organized in Chicago, Nov. 20th, 1882.

CONSTITUTION AND BY-LAWS

ASSOCIATION

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1908

PAST PRESIDENTS

W. K. Morley....1882
W. K. Morley....1883
C. Selden....1884
C. W. Hammond....1885
A. R. Swift....1886
Geo. L. Lang....1887
Geo. C. Kinsman....1888
C. A. Darlton....1889
G. T. Williams....1890
C. S. Jones....1891
L. H. Korty....1892
U. J. Fry....1893
O. C. Greene....1894
M. B. Leonard....1895
G. M. Dugan....1896
J. W. Lattig....1897
W. W. Ryder....1898
L. B. Foley....1899
W. F. Williams....1900
C. F. Annett....1901
J. H. Jacoby....1902
C. S. Rhoads....1903
H. C. Hope....1904
E. E. Torrey....1905
E. A. Chenery....1906
E. P. Griffith....1907

OFFICERS

1908-9

PRESIDENT.

W. J. Camp.....C. P. Ry.....Montreal.

VICE-PRESIDENT.

G. W. Dailey.....C. & N. W. Ry.....Chicago, Ill.

SECRETARY AND TREASURER.

P. W. Drew.....W. C. Ry.....Chicago, Ill.

COMMITTEES

ARRANGEMENTS.

E. H. Millington.....Mich. Central.....Detroit, Mich.
Wm. Marshall .....C. P. R.....Toronto, Ont.
G. C. Kinsman.....Wabash .....Decatur, Ill.
W. W. Ashald.....G. T. .....Montreal.
Wm. Kline .....L. S. & M. S.....Toledo, O.

LADIES' RECEPTION.

Mrs. E. H. Millington, Mrs. G. C. Kinsman,
Mrs. Wm. Marshall, Mrs. Wm. Kline,
Mrs. W. W. Ashald.

TOPICS.

J L. Davis.....C. & E. I. Ry.....Chicago, Ill.
E. Parsons.....Ill Cent. Ry.....Chicago, Ill.
Percy Hewett .....Sunset Lines.....Houston, Tex.

HIGH TENSION WIRE CROSSINGS.

G. A. Cellar.....Pa. Lines W. of P....Pittsburgh, Pa.
G. H. Groce.....Ill. Central.....Chicago, Ill.
G. W. Dailey.....C. & N. W.....Chicago, Ill.
E. H. Millington.....M. C. .....Detroit.
Chas. Selden.....B. & O.....Baltimore.

SUB-COMMITTEES ON QUARTERLY MEETINGS.

Eastern.

C. Selden, L. B. Foley, A. B. Taylor.

Western.

E. A. Chenery. J. L. Davis, C. S. Rhoads.

CONSTITUTION

ARTICLE I.

Title.

The organization shall be known as "The Association of Railway Telegraph Superintendents.

ARTICLE II.

Object.

The object of this Association shall be: "The Improvement of the Telegraph Service," and the promotion and advancement in general of the interests of the telegraph department of railroads.

ARTICLE III.

Who May be Members.

Sec. 1. The membership of the Association shall be of three classes: Active, Associate and Honorary.

Sec. 2. Who may be Active Members:

Anyone connected in an official capacity with the telegraph, telephone, electric light, electric power, or electric signal department of any railroad, may become an Active Member of this Association, by subscribing to the Constitution and paying into the Treasury $5.00 per annum and receiving a majority vote of the members present.

Sec. 3. Who may be Associate Members.

Anyone connected with a telegraph or telephone supply house or publication may become an Associate Member, subject to receiving a majority vote of the members present and paying into the Treasury $5.00 per annum.

Associate Members shall be entitled to all the rights and privileges of Active Members, except that they shall not be allowed to vote.

Sec. 4. Who may be Honorary Members:

Men prominent in Railway Telegraph or Telephone circles, and those who have by furnishing papers and otherwise contributed to the success of the Association, and any Active Member, who is in good standing as to payment of dues, leaving the service of railroad companies or of the departments mentioned in Sec. 2, may become an Honorary Member upon receiving a majority vote of members present. Honorary members shall be entitled to all the rights and privileges of Active Members except that they shall not be allowed to vote.

ARTICLE IV.

Officers.

The officers of this Association shall be elected by ballot, and shall hold office for one year, or until their successors are chosen. They shall consist of a President, Vice-President, Secretary and Treasurer; the last two offices may be filled by one person. The officers of this Association shall constitute an Executive Committee.

ARTICLE V.

Duties of Officers.

President—The President shall preside at all meetings of the Association, and perform such other duties as are generally performed by that officer.

Vice-President—The Vice-President shall preside in the absence of the President, and when so acting shall be governed by the rules prescribed for that officer.

Secretary—The Secretary shall keep correct minutes of each meeting, and cause the same to be printed immediately after adjournment, and send to each member two copies of the same. He shall also notify the members, by circular,

of the time and place of each meeting, and perform such other duties as may be required by the Executive Committee.

Treasurer—The Treasurer shall collect all moneys due the Association, giving his receipt therefor, pay all bills contracted for by it, upon the approval of the Executive Committee, and at each annual meeting render a detailed statement of the receipts and expenditures of the previous year, which statement shall be printed with the proceedings of the meeting at which it is presented. In order to meet expenses in excess of the receipts from annual dues, he shall levy a pro rata assessment upon the members of this Association.

ARTICLE VI.

Vacancies.

In case of a vacancy in any office, it shall be filled for the remainder of the year by the Executive Committee.

ARTICLE VII.

Seven members shall constitute a quorum at any meeting.

Amendments to the Constitution.

This constitution shall be changed only by an amendment offered in writing at a regular meeting, one month's notice having been given to each member by the Executive Committee, and can only be adopted by an affirmative vote of two-thirds of the members present.

BY-LAWS.

1. The Executive Committee is authorized to declare applicants acting members previous to the annual meeting.

2. The annual meeting of this Association shall be held at such time and place as shall be designated by the majority vote of members at a previous meeting.

3. Special meeting may be held upon the call of the Executive Committee, when requested by seven or more members.

4. Any member who is in arrears in payment of dues ninety days after the annual meeting shall be considered suspended, and should dues not be paid on or before the succeeding annual meeting, his name shall be dropped from the roll of membership.

At all meetings the following shall be the order of business:

1. Election of New Members.
2. Reading the Minutes of Regular and Special Meetings.
3. Report of Treasurer.
4. Reports of Standing Committees.
5. Reports of Special Committees.
6. Election of Officers.
7. Miscellaneous Business.
8. Adjournment.

LIST OF ACTIVE MEMBERS

Name.	Railroad.	Address.
C. P. Adams	Southern	Washington, D. C.
W. W. Ashald	G. T.	Montreal, Que.
B. B. Baughman	W. & L. E.	Canton, O.
F. E. Bentley	T. R. R. Assn.	St. Louis, Mo.
E. R. Bonnell	C. C. C. & St. L.	Indianapolis, Ind.
George Boyce	C. St. P. M. & O.	St. Paul, Minn.
F. G. Boyer	N. T. Co.	Oil City, Pa.
F. M. Brown	P. & L. E.	Pittsburgh, Pa.
J. C. Browne	St. L. I. M. & S.	Little Rock, Ark.
S. K. Bullard	M. K. & I.	Sedalia, Mo.
W. J. Camp	Can. Pacific	Montreal, Que.
G. A. Cellar	Pa. Lines W. of P.	Pittsburgh, Pa.
E. A. Chenery	Mo. Pac.	St. Louis, Mo.
J. P. Church	Wabash	Decatur, Ill.
W. P. Cline	A. C. Line	Wilmington, N. C.
W. L. Connelly	C. I. & S.	Gibson, Ind.
G. W. Dailey	C. & N. W.	Chicago, Ill.
J. L. Davis	C. & E. I.	Chicago, Ill.
E. W. Day	B. & O.	Baltimore, Md.
E. E. Dildine	Nor. Pac.	St. Paul, Minn.
G. A. Dornberg	Pa. Lines W of P.	Pittsburgh, Pa.
P. W. Drew	Wis. Central	Chicago, Ill.
I. T. Dyer	S. P. L. A. & S. L.	Los Angeles, Cal.
J. B. Fisher	Penna	Philadelphia, Pa.
L. B. Foley	D. L. & W.	New York, N. Y.
A. S. Foote	Sunset Lines	Houston, Tex.
S. A. D. Forristall	B. & M.	Boston, Mass.
B. F. Forbes	O. S. L.	Salt Lake City, Utah
U. J. Fry	C. M. & St. P.	Milwaukee, Wis.
C. H. Gaunt	A. T. & S. F.	Topeka, Kas.
O. C. Greene	Nor. Pac.	St. Paul, Minn.
E. P. Griffith	Erie	Jersey City, N. J.

Name.	Railroad.	Address.
G. H. Groce	Ill. Central	Chicago, Ill.
J. G. Hampton	No. Amn. T. Co	Deseronto, Ont.
A. Hatton	C. P.	Winnepeg, Man.
J. L. Henritzy	C. & S	Denver Col.
Percy Hewett	Sunset Lines	Houston, Tex.
H. C. Hope	C. St. P. M. & O	St. Paul, Minn.
J. G. Jennings	C. R. I. & P	Chicago, Ill.
F. T. Jennings	C. P.	Sudburg, Ont.
W. M. Johnson, Jr.	B. & L. E	Greenville, Pa.
L. M. Jones	A. T. & S. F	Topeka, Kas.
G. C. Kinsman	Wabash	Decatur, Ill.
V. T. Kissinger	B. & M. R	Lincoln, Neb.
Wm. Kline	L. S. & M. S	Toledo, O.
E. A. Klippel	O. R. & N	Portland, Ore.
C. L. Lathrop	P. S. & N	Angelica, N. Y.
C. M. Lewis	P. & R	Reading, Pa.
E. J. Little	Gt. Nor.	St. Paul, Minn.
R. L. Logan	K. C. Sou	Kansas City, Mo.
E. E. McClintock	C. & W	Denver, Colo.
G. B. McCoy	Y. & M. V	Greenville, Miss.
W. P. McFarlane	C. & N. W	Omaha, Neb.
M. Magiff	Cent. Vt.	St. Albans, Vt.
M. W. Maguire	N. & S	Norfolk, Va.
W. Marshall	C. P.	Toronto, Ont.
W. S. Melton	Q. & C	Lexington, Ky.
R. W. Mitchener	N. Y. C. & St. L	Cleveland, O.
E. H. Millington	M. C.	Detroit, Mich.
J. L. Orbison	C. H. & D	Cincinnati, O.
C. A. Parker	D. N. W. & P	Denver, Colo.
E. Parsons	Ill. Cent.	Chicago, Ill.
E. A. Patterson	C. M. & St. P	Milwaukee, Wis.

Name.	Railroad.	Address.
C. P. Phelps	L. & N.	Louisville, Ky.
W. H. Potter	Southern	Washington, D. C.
F. S. Rawlings	Sou. Pac.	San Francisco, Cal.
Geo. Reith	Virginia	Norfolk, Va.
C. S. Rhoads	C. C. C. & St. L.	Indianapolis, Ind.
Thos. Rodger	G. T.	Montreal, Que.
Geo. Rooke	C. P.	Montreal, Que.
W. W. Ryder	C. B. & Q.	Chicago, Ill.
C. Selden	B. & O.	Baltimore, Md.
J. B. Sheldon	Union Pac.	Omaha, Neb.
F. G. Sherman	C. R. R. of N. J.	New York.
N. E. Smith	N. Y., N. H. & H.	New Haven, Conn.
F. W. Smith	B. & L. E.	Greenville, Pa.
P. W. Snider	C. P.	St. John, N. B.
F. S. Spafard	C. R. I. & P.	Chicago, Ill.
J. S. Stevens	C. & O.	Richmond, Va.
A. B. Taylor	N. Y. C. & H. R.	New York.
H. D. Teed	St. L. & S. F.	St. Louis, Mo.
G. C. Todd	N. Y. C. & St. L.	Cleveland, O.
E. E. Torrey	M. & O.	Jackson, Tenn.
H. A. Tuttle	M. St. P. & S. S.	Minneapolis, Minn.
S. L. Van Akin	N. Y. C. & H. R.	Syracuse, N. Y.
F. H. Van Etten	Sou. Ind	Chicago, Ill.
J. M. Walker	D. & R. G.	Denver, Colo.
W. C. Walstrum	N. & W.	Roanoke, Va.
B. Weeks	Ill. Cent.	Memphis, Tenn.
L. S. Wells	Long Island	Long Island City.
W. F. Williams	S. A. Line	Portsmouth, Va.
R. N. Young	C. P.	Winnipeg, Man.

ASSOCIATE MEMBERS

R. D. Brixie.....New York.
C. E. Brown.....Chicago.
A. N. Bullens.....Boston
H. P. Clausen.....Chicago.
A. B. Conover.....Chicago.
H. D. Crouch.....Montreal, Que.
W. F. Crowell.....New York.
Geo. M. Dodge.....Valparaiso, Ind.
A. P. Eckert.....New York.
F. F. Fowle.....Chicago.
J. J. Ghegan.....New York.
Edwin R. Gill.....New York.
L. C. Hall.....Newark, N. J.
W. E. Harkness.....New York.
T. S. Hemingway.....Buffalo, N. Y.
Alex Henderson.....Boston, Mass.
W. E. Hinmon.....Dayton, O.
F. C. Hirsch.....Montreal.
S. Johnson.....New York.
B. A. Kaiser.....New York.
J. C. Kelsey.....Chicago.
John Langan.....New York.
M. E. Launbranch.....New York.
E. C. Lewis.....Chicago.
H. E. Merrill.....New York.
P. W. Miller.....New York.
Jay G. Mitchell.....Cleveland, O.
Harrison Osborn.....New York.
F. H. Reed.....New York.
H. O. Rugh.....Sandwich, Ill.
B. H. Shepard.....Syracuse, N. Y.
H. C. Slemin.....Rochester, N. Y.
Henry M. Sperry.....New York.
E. W. Vogel.....Chicago.
J. V. Watson.....Chicago.
Archibald Wray.....Chicago.
G. F. Wiley.....Philadelphia.

HONORARY MEMBERS

Thos. A. Edison.
John B. Taylor.
T. D. Lockwood.
Ralph W. Pope.
J. C. Barclay.
J. B. Stewart.
A. J. Earling.
C. H. Bristol.
C. E. Freeman.
Wm. Maver, Jr.
Geo. C. Maynard.
W. K. Morley.
F. P. Valentine.
W. E. Gilmore.
H. V. Miller.
H. F. Houghton.
J. F. Wallick.
J. Levin.
J. R. Terhume.
James Kent.
G. F. Weidman.
J. H. Jacoby.
G. M. Dugan.
W. J. Holton.
Wendell Baker.
L. H. Korty.
R. C. Clowry.
W. C. Brown.
Geo. W. Stevens.
Marvin Hughitt.
W. M. Greene.
T. P. Cook.
F. S. Gannon.
Geo. T. Williams.
Belvidere Brooks.
I. N. Miller.
T. R. Taltavall.
J. W. Fortune.
W. J. Murphy.
C. D. Gorham.
Charles McLaughlin.
J. B. Taltavall.
E. A. Smith.
C. G. Sholes.
A. R. Swift.
E. Borden.
F. E. Clary.
C. A. Darlton.
C. F. Annett.
Geo. L. Lang.
F. A. C. Ferguson.
H. C. Sprague

Association of Railway Telegraph Superintendents.

Twenty-Seventh Annual Convention.

MONTREAL, CANADA.

June 24th, 25th, 26th, 1908.

The twenty-seventh Annual Convention of the Association of Railway Telegraph Superintendents, was held in the Ladies' Ordinary of the Windsor Hotel, Montreal, Quebec, on Wednesday, Thursday and Friday, June 24th, 25th and 26th, 1908.

ATTENDANCE

ACTIVE MEMBERS.

W. W. Ashald and wife, Grand Trunk Ry., Montreal.
B. B. Baughman, W. & L. E., Canton, O.
F. M. Brown, P. & L, E., Pittsburgh, Pa,
F. G. Boyer and wife, N. T. Co., Oil City, Pa.
Geo. Boyce, C. St. P. M. & O., St. Paul, Minn.
J. P. Church, Wabash, Decatur, Ill.
G. A. Cellar, Pa. Lines W. of P., Pittsburg, Pa.
W. P. Cline, wife and daughter, A. C. Line, Wilmington, N. C.
E. A. Chenery and son, Mo. Pac., St. Louis, Mo.
W. J. Camp and wife, C. P. R., Montreal.
G. A .Dornberg, Pa. Lines W. of P., Pittsburgh, Pa.
J. T. Dyer, S. P. L. A. & S. L., Los Angeles, Cal.
E. E. Dildine, Nor. Pac., St. Paul, Minn.
G. W. Dailey, C. & N. W., Chicago.
John L. Davis, wife and son, C. & E. Ills., Chicago.
P. W. Drew and wife, Wis. Cent., Chicago.
J. A. D. Forristall, B. & M., Boston.
L. B. Foley and wife, D. L. & W., New York.
B. F. Frobes and wife, O. S. L., Salt Lake City.
J. B. Fisher, Penna R. R., Philadelphia.
E. P. Griffith, wife and daughter, Erie R. R., Jersey City, N. J.

A. Hatton, C. P. R., Winnipeg.
J. G. Hampton, No. Amn. Tel Co., Deseronto, Ont.
W. M. Johnson, Jr., B. & L. E., Greenville, Pa.
F. T. Jennings, C. P. R., Sudburg, Ont.
V. T. Kissinger and wife, C. B. & Q., Lincoln, Neb.
Wm. Kline, L. S. & M. S., Toledo, O.
C. L. Lathrop and wife, P. S. & N., Angelica, N. Y.
C. M. Lewis, P. & R., Reading, Pa.
R. L. Logan and wife, K. C. Sou., Kansas City, Mo.
W. Marshal, C. P. R., Toronto, Ont.
E. H. Millington, M. C. R. R., Detroit, Mich.
M. Magiff and wife, Cent. Vt., St. Albans, Vt.
W. S. Melton and son, C. N. O. & T. P., Lexington, Ky.
E. E. McClintock, C. & W., Denver, Colo.
W. P. McFarlane, C. & N. W., Omaha, Neb.
Thos. Rodger and wife, G. T., Montreal.
Geo. T. Rooke, C. P. R., Montreal.
C. S. Rhoads, C. C. C. & St. L., Indianapolis, Ind.
W. W. Ryder and wife, C. B. & Q., Chicago.
Fred W. Smith, B. & L. E. ,Greenville, Pa.
Chas. Selden, B. & O., Baltimore.
J. S. Stevens, C. & O., Richmond, Va.
P. W. Snider and wife, C. P. R., St. John, N. B.
John B. Sheldon, Union Pac., Omaha, Neb.
N. E. Smith, N. Y. N. H. & H., New Haven, Conn.
F. G. Sherman and wife, C. R. R. of N. J., New York.
H. D. Teed, St. L. & S. F., St. Louis.
G. C. Todd and wife, N. Y. C. & St. L., Cleveland,O.
A. B. Taylor, wife and daughter, N .Y. C. & H. R., New York.
S. L. Van Akin and wife, N. Y. C. & H. R., Syracuse, N. Y.
F. H. Van Etten, Sou. Ind., Chicago.
W. C. Walstrum and daughter, N. & W., Roanoke, Va.
W. F. Williams, wife and daughters, S. A. Line, Portsmouth, Va.
R. N. Young, C. P. R., Winnepeg, Man.

ASSOCIATE MEMBERS.

R. D. Brixey, New York.
A. N. Bullens, Boston.
H. D. Crouch, Montreal.
W. F. Crowell, New York.

G. M. Dodge and son, Valparaiso, Ind.
A. P. Eckert and wife, New York.
E. R .Gill, New York.
John J. Ghegan, wife and daughter, New York.
L. C. Hall, Newark, N. J.
W. E. Harkness, New York.
T. S. Hemengway, Buffalo, N. Y.
W. E. Hinmon, Dayton, O.
F. C. Hirsch, Montreal.
B. A. Kaiser, New York.
J. C. Kelsey and wife, Chicago.
M. E. Launbranch, New York.
E. C. Lewis and wife, Chicago.
H. E. Merrill and wife, New York.
P. W. Miller, New York.
Franklin H. Reed, New York.
H. O. Rugh, Sandwich, Ill.
H. C. Slemin, Rochester, N. Y.
Bert H. Shepard, Syracuse, N. Y.
E. W. Vogel and wife, Chicago.
J. V. Watson, Chicago.
Archibald Wray, Chicago.
Geo. F. Wiley, Philadelphia, Pa.

HONORARY MEMBERS AND VISITORS.

James Kent and wife, Montreal.
Wm. Maver, Jr., wife and daughter, New York.
John B. Taltavall, wife and daughter, New York.
I. McMichael and wife, Toronto, Ont.
F. E. Clary, New Haven, Conn.
Edgar A. Smith, Boston.
N. R. Fill, St. Louis, Mo.
L. S. Humes and wife, Montreal.
Wm. W. Mulford, New York.
C. L. Howk, Chicago.
G. W. Swan, New York.
R. R. Newell, New York.
S. R. Wright and wife, Rochester, N. Y.
G. E. Lawlor, Pittsburgh, Pa.
A. G. Francis, wife and sons, Chicago.

Chas. E. Hague and wife, Rochester, N. Y .
J. O. Oliver, Philadelphia.
H. C. Stephan, Buffalo, N. Y.
W. T. Saunders, Chicago.
L. B. McFarlane and wife, Montreal.
S. B. Kramer, Montreal.
L. H. Merrill, Minneapolis, Minn.
J. H. Kenehan, Montreal.
Misses E. N. and Jane Neeley, Portsmouth, Va.
Mrs. A. V. Cornish, Lincoln, Neb.
Gladys and Eric Camp, Montreal.
A. C. Lindemuth and wife, Chicago.
Val. V. Mintun, Kansas City, Mo.
James A. Rugh, Sandwich, Ill.
Misses May and Margaret Kent, Montreal.
John F. Richardson and wife, Montreal.

FIRST DAY—MORNING SESSION.

(Wednesday, June 24th, 1908).

The Convention was called to order at 10:15 A. M., the President, Mr. E. P. Griffith, Erie Railway, Jersey City, N. J., being in the chair.

In opening the proceedings the President said:

Gentlemen, as President of this Association it is very pleasant indeed for me to see so many of you here in attendance at our twenty-seventh annual convention. This indicates to me that we, like the City in which we are holding this Convention, have made great strides in advance since the time we met here before.

It is my pleasure to introduce to you Alderman George W. Sadler, representing the Corporation of the City of Montreal, and His Worship the Mayor, who has been unavoidably detained and who has not found it possible to be with us at this, our opening session.

I have much pleasure in introducing to you Alderman George W. Sadler.

Alderman Sadler: Mr. President, ladies and gentlemen, of the American Association of Telegraph Superintendents, I hope you will excuse me if I appear to be rather slow in getting out the name of your Association. I can assure you that it is because I wish to be very particular indeed.

In my capacity as an Alderman, I have met with so many telegraphers—although I know you do not look like the kind of telegraphers I refer to—still, I want to be sure that I get your name right.

My duty this morning is a very pleasant one, indeed, and one of my first remarks must be an apology for His Worship, Mayor Patette, who is absent in Europe. I know he would have been only too delighted to welcome you on behalf of the Citizens and Corporation of the great City of Montreal.

I have also to apologize for our acting Mayor, upon whom the duty of welcoming you should devolve in the absence of our worthy Chief Magistrate. Today, as some of you probably know, is the feast of St. John Baptiste, the patron Saint of our French Canadian citizens, and, in the hurry and excitement of his efforts to honor his patron saint, our Worthy Acting Mayor may have forgotten the American Association of Railway Telegraph Superintendents.

In the absence of these two very worthy and distinguished gentlemen it becomes my pleasure to welcome you to our city on behalf of the Corporation and Citizens of Montreal.

I understand that it is some years since you have held a meeting with us. That being the case, I know you will find a great deal of difference in the City of Montreal, as compared with what it was when you were here some years ago.

Although it looks a bit cloudy today, I trust that the sun will shine bright while you are here, and that your stay will be one which will be long remembered as the most successful meeting in the history of your Association.

I trust that you will make yourself perfectly at home in our city, and that you will enjoy every minute of the time you spend with us.

So far as the technical side of your meeting is concerned, I do not need to say anything. You are an old and important Association, and I know that whatever subjects are brought before you for consideration will be thoroughly dealt with, and that the results of your deliberations will reflect credit upon yourselves, both as an Association and individually.

Once again I bid you a hearty welcome to our city, and hope that when you come to leave us you will do so feeling benefited by your short stay with us, and, with a determination to come and see us again in the very near future.

President Griffith: I am sure we will feel grateful to Alderman Sadler for his kind words of welcome to us this morning, and I am sure that each member of this Association present, appreciates fully what he has said.

We have with us also today a gentleman, who, perhaps, was more instrumental than any other individual in bringing this Association to Montreal this year, and in making the arrangements for our care and entertainment.

I have much pleasure in introducing to you Mr. Charles Chaput, Vice-President of the Business Men's League of Montreal.

Mr. Chaput: Mr. President, ladies and gentlemen, in the absence of the President of the Montreal Business Men's League, Mr. Henry Myles, it is my pleasant duty to say a

few words of welcome to you, as Vice-President of that organization.

In the name of the Montreal Business Men's League, I have much pleasure in extending to you a hearty welcome to the City of Montreal, and sincerely hope that your stay amongst us will be a most pleasant and enjoyable one.

The Montreal Business Men's League, since its inception has always taken a deep interest in all conventions coming to Montreal. I may say that we have been instrumental in bringing many meetings to our city, and every year will add to this number.

We hope that your meeting here will be a most profitable one, and, when you have transacted your business and taken in some of the sights of our fair city, we will say to you "Aurevoir, come again."

I am very sorry to hear that Mrs. Griffith, the wife of your worthy President is not here today. Miss Griffith, however, is here in her stead, and I am sure is fully capable of filling her place with honor and dignity.

I cannot allow this occasion to pass without offering Miss Griffith a few flowers.

On behalf of the Association, Mr. Chaput then presented Miss Griffith with a magnificent bouquet of American Beauty roses.

President Griffith: Mr. Chaput, I regret that Mrs. Griffith is so indisposed as to be unable to be present this morning at the opening of this meeting. I wish to thank you very kindly on behalf of the Association for your words of welcome to us here, and I also wish to thank you on behalf of Miss Griffith for your kind words, and the magnificent bouquet with which you have presented her.

Mr. Sadler, and Mr. Chaput, in your official capacities, I wish to thank you on behalf of this Association for the

kind greetings you have expressed towards us this morning. I know we all feel that we shall have a very enjoyable and profitable time during our stay here.

This Convention is not a Convention of the kind which has been recently agitating our cousins on the other side of the imaginary line. Although we have a good deal of wire pulling, I am pleased to say that it is not of the kind which is usually done at political meetings.

Many of us have been to your city before, and the recollection of the pleasant times we had then is still fresh in our minds. We are glad to see so many more on this occasion.

As I said before, we have grown a great deal since our last meeting here, and we hope that you have grown in proportion.

Again I wish to thank you very kindly.

Unless there is some objection to it, I think it would be a good plan for us to take a recess for five or ten minutes, in order to permit the ladies who do not wish to remain with us, to go and see the shops.

RECESS.

Upon the Convention re-opening, the Secretary said:

The first order of business, according to our by-laws, is the reception of new members. The following have applied for membership in our Association:

NEW MEMBERS

ACTIVE.

H. D. Teed	St. L. & S. F. R. R.	St. Louis, Mo.
R. W. Mitchener	N. Y. C. & St. L.	Cleveland, O.
W. L. Connelly	C. I. & I. R. R.	Gibson, Ind.
F. G. Boyer	Natl. Transit Co.	Oil City, Pa.
F. M. Brown	P. & L. E.	Pittsburgh, Pa.

E. E. Dildine	Nor. Pac. Ry	St. Paul, Minn.
J. B. Sheldon	Union Pac. Ry	Omaha, Neb.
B. B. Baughman	W. & L. E.	Canton, O.
F. T. Jennings	C. P. R.	Sudburg, Ont.
G. C. Todd	N. Y. C. & St. L.	Cleveland, O.
R. N. Young	C. P. R.	Winnipeg, Man.
F. W. Smith	B. & L. E.	Greenville, Pa.
Geo. Reith	Va. Ry.	Norfolk, Va.
Geo. T. Rooke	C. P. R.	Montreal, Que.
Thos. Rodger	Grand Trunk	Montreal, Que.
W. Marshall	C. P. R.	Toronto, Ont.
W. M. Johnson, Jr.	B. & L. E.	Greenville, Pa.
J. P. Church	Wabash Ry	Decatur, Ill.
M. W. Maguire	N. & S. Ry.	Norfolk, Va.
E. R. Bonnell	C. C. C. & St. L.	Indianapolis, Ind.
J. G. Hampton	No. Amer. Tel. Co.	Deseronto, Ont.
Geo. Boyce	C. St. P. M. & O.	St. Paul, Minn.
F. S. Rawlings	Sou. Pac. Ry.	San Francisco.
A. Hatton	C. P. R.	Winnipeg, Man.
P. W. Snider	C. P. R.	St. Johns, N. B.

Secretary Drew: I would move that these gentlemen be elected members of the Association.

This motion being duly seconded and put to the Meeting, was carried.

We have the following names of gentlemen who are practically retired from the Telegraph Service. I think it would be a good idea to place them on the Honorary List.

I would therefore move that the following gentlemen be put on the Roll of Honorary Members of this Association:

HONORARY.

Wendell Baker	New York.
L. H. Korty	Omaha, Neb.
F. A. C. Ferguson	Vicksburg, Miss.
H. C. Sprague	St. Louis, Mo.

The motion being duly seconded, was carried.

The President: I understand that we have a long list of Associate Members, and would ask the Secretary to read it.

The Secretary read the following list of applicants for membership as Associate members:

ASSOCIATE.

M. E. Launbranch	West. Elec. Co	New York.
W. E. Harkness	West. Elec. Co	New York.
A. B. Conover	J. A. Roebling's Sons	Chicago.
F. H. Reed	Amn. Tel. Journal	New York.
B. H. Shepard	Cent. N. Y. Tel. Co.	Syracue, N. Y.
H. D. Crouch	Nor. Elec. & Mfg. Co.	Montreal, Que.
W. F. Crowell	N. Y. Tel. Co	New York.
W. E. Hinmon	Egry. Reg. Co	Dayton, O.
H. C. Slemin	Stromberg-Carlson Co.	Rochester, N. Y.
Archibald Wray	Kellog Switch Bd. Co.	Chicago.
L. C. Hall	N. Y. & N. J. Tel. Co.	Newark, N. J.
A. N. Bullens	N. E. Tel. and Tel. Co.	Boston, Mass.
G. F. Wiley	Bell Tel. Co. of Pa.	Philadelphia.
T. S. Hemingway	L. M. Ericsson Tel. Co.	Buffalo, N. Y.
E. C. Lewis	Stromberg-Carlson Co.	Chicago.
P. W. Miller	W. R. Brixey Co	New York.
F. C. Hirsch	Tel. Sys. of Can	Montreal.
J. V. Watson	Watson Ins. Wire Co.	Chicago.

Mr. Williams: I would move that the gentlemen whose names have just been read by our Secretary be elected as Associate Members of the Association, under the ordinary conditions.

Which motion being duly seconded, was carried.

The President: Before proceeding with our next order of business, I wish to make a sad announcement. I have just been handed a bulletin, dated Princeton, N. J., June 24th, "Former President Grover Cleveland, died here at eight-forty, A. M., today."

Next on the order of business is the reading of the minutes of our last regular meeting.

Mr. Selden: I would move, Mr. President, that the reading of the Minutes be dispensed with, and that we proceed with the regular business before the Convention.

This motion was seconded by Mr. Chenery, and carried.

The President: Now, that we have dispensed with the reading of the Minutes we will have the report of the Treasurer.

The Treasurer then presented his report as follows:

TREASURER'S REPORT.

Ass'n. of Ry. Telegraph Superintendents, Montreal,
June 24, 1908.

RECEIPTS.

On Hand June 19, 1907	$ 93.00
Dues and Fees	500.00
Minutes Sold	2.00
Advertisements	255.00
Total	$850.00

DISBURSEMENTS.

Expense of Minutes of 1907 Annual Meeting	$501.30
Postage and Expressage	19.35
Printing Circulars, Etc	12.25
Badges	13.10
Secretary's Salary	300.00
Cash on Hand	4.00
Total	$850.00

Respectfully submitted,

P. W. DREW, Treasurer.

Mr. Camp: I would move that the report of the Treasurer, as read, be received and adopted.

This motion being duly seconded by Mr. Rhoads, and carried.

The President: The next item on our programme is the report of the standing committees. In order that the members should have a chance to get around a little today, as I know they are anxious to do, we will hear from the Committee on Arrangements first. Mr. Camp is Chairman of that Committee.

Mr. Camp: Mr. President, and Gentlemen, on behalf of the Committee of Arrangements, I beg to report, your circular calling this meeting gives the hotel rates, rates on the Richelieu and Ontario Navigaton Company's steamers, and so forth. The programme for entertainment is as follows:

At 5 P. M. today we leave the G. T. R. Station for Lachine. Mr. Ashald will arrange for transportation of all who intend going. On arrival at Lachine, we board a steamer of the Ottawa River Navigation Company, and shoot the Lachine Rapids, arriving in Montreal for dinner. The fare on the boats being only twenty-five cents, your Committee did not think it advisable to apply for a reduction.

I understand that a large number of those present are members of the Masonic craft, and as there is a regular meeting of one of the French lodges this evening, I have obtained a cordial invitation from the Worshipful Master to all Masons attending the Convention to join them in Fraternal intercourse. A number of English speaking Past Masters will be present to assist in examinations, and I can assure all a most cordial welcome, and an enjoyable evening. Evening dress is not necessary.

Those present who are not members of the craft are requested to entertain the ladies.

Tomorrow afternoon, through the kindness of the Montreal Street Railway, we will have a trolley ride. Cars will

leave from the main door of this Hotel at two o'clock sharp. As there is no siding near here, all must be ready sharp on time. Before, or during the ride, Mr. S. R. Martin will take photographs of the party. Mr. Martin, being an old Railway Telegraph Operator, I hope you will make his effort a success.

Through the courtesy of the Canadian Pacific Railway, we will be able to visit the ancient and historic City of Quebec. Trains will leave Place Viger Station at 11:30 Friday night, and returning leave Quebec at 11:30 Saturday night. All who wish to take this trip will please sign the list on the Secretary's table, stating by whom accompanied, and the number of berths required. I would like this attended to as soon as possible, so that I can arrange transportation and sleeping accommodation. We are due to arrive at Quebec at 6:30 Saturday morning, and will have breakfast at the Chateau Frontenac.

The Quebec Railway Light and Power Company very kindly agreed to furnish us with a special electric train, which will leave Quebec for the Roman Catholic Shrine of St. Anne de Beaupre, largely visited by Pilgrims from all over the Continent. When returning we will stop for a short time at Montmorency Falls, arriving at Quebec in time for lunch. Meals at the Chateau will be one dollar each.

During the afternoon all must entertain themselves, but do not forget that the train for Montreal will leave at 11:30 P. M.

Should any of the Active Members desire to return home via Winnepeg or Vancouver, Mr. Kent has arranged for a special sleeping car to leave Montreal on Sunday at 10:10 A. M., and will be pleased to arrange transportation. On account of the law, which is almost identical with that of

the United States, this can only apply to Active Members and their families, and there being only one sleeper, only a limited number of them.

The Western Union and Great Northwest Telegraph companies, and the Postal and C. P. R. telegraphs extend free telegraph privileges.

The American Telegraph and Telephone Company, and the Bell Telephone Company of Canada extend free privileges after six P. M. during the session.

In order that the ladies will know just what is to be done, at the request of Mrs. Camp, Chairman of the Ladies Committee, I have had a programme printed for their use

Mr. Charles R. Hosmer very kindly donated an amount for car tickets, which have been supplied to the Ladies Committee, and which will probably be sufficient.

I would like to mention, before closing, that Mr. Kent has cordially seconded my efforts to make this year's session a pleasant one, and it was through him I obtained the above courtesies over the C. P. R.

Mr. Ashald, on behalf of the G. T. R., was ready to do more, but, as our work is likely to be heavy, it was thought that the entertainment above outlined would be sufficient.

I thank the members of my Committee for their warm support of all my suggestions.

On behalf of the Committee I move that this report be received and adopted, as far as practicable.

Mr. Ashald: I have much pleasure in seconding Mr. Camp's motion.

The motion being put to the meeting, was unanimously adopted.

The President: The next item on our programme is the report on the Topics Committee. Mr. Davis is Chairman of that Committee.

Mr. Davis: The work of the Topics Committee has been rather easy this year, because the members have seemed very willing to respond to the request which was made upon them. We outlined the work that we wanted done, and the members very willingly came forward and did it.

I could say a whole lot in expressing my appreciation of the hearty response that has been made to the requests of the Topics Committee, but we have not a great deal of time for that sort of thing, and, inasmuch as you have seen the programme, the only thing I need to say is that the Topics Committee extends its thanks to those gentlemen who have so very liberally and kindly responded.

The President: We have in the Secretary's File a full list of the Topics to which the Chairman of the Committee alludes, and I think we might proceed with the papers immediately.

I think it would be a good idea for us to take up the question of the telephone in railway service. Mr. W. W. Ryder, Superintendent Telegraph, Chicago, Burlington and Quincy Railway, has a paper on that subject, I believe.

The Secretary: Before Mr. Ryder begins to read his paper I wish to say that we understood that the papers should be sent to the Secretary in time to be printed before the meeting. Perhaps we did not insist sufficiently upon that, because, as a matter of fact, we only had a few papers in time to print them, one from Mr. Chenery, and one from Mr. Ryder.

I waited until the eighth of June, and not receiving any more papers. I had those two papers printed and forwarded to the members.

Mr. Davis: As Chairman of the Topics Committee, I would like to make a request to the effect that the rule established at the last meeting be waived, so far as prac-

ticable, for the reason that some of the men who have been asked to participate in this programme, probably did not receive a copy of the Minutes of the last meeting, and were not present at the last meeting. I have with me papers from two or three gentlemen who were requested to take part in this programme, and if the members present see fit to allow those papers to be read, I would appreciate it.

Mr. Ryder's paper is as follows:

DISPATCHING TRAINS BY TELEPHONE.

By W. W. Ryder, Supt. Telegraph C. B. & Q. Ry.

The proposition of substituting the telephone for the telegraph in the handling of trains has in the past been the subject to much discussion.

The electric interurban roads early recognized the desirability of this means of communication for the purpose mentioned, and as the number and speed of their trains and the weight of equipment increased, necessitating a more exact method of dispatching, they extended their use of the telephone until it is now recognized by them as the standard method of operation.

The steam roads, however, with their ultra-conservatism, were loath to part with the long established telegraph, and, while a little experimenting has been done from time to time in a very small way, it is only recently that the use of the telephone for this purpose has been attempted on a sufficiently large scale to secure a fair demonstration of its possibilities. The immediate incentive for these experiments was the near approach of the date for the enforcement of the Federal nine hour law, coupled with the well defined shortage of telegraph operators that had existed for two or three years.

The first experiment on the Burlington of handling trains

exclusively by telephone was begun on the 11th of last December, on the portion of our Main Line between Aurora and Mendota, a distance of 46 miles. Eleven offices were cut in on this circuit. The result was so satisfactory, that the construction of another circuit from Aurora to Galesburg, 125 miles, with sixteen offices was immediately authorized to handle the dispatching between Mendota and Galesburg. This circuit was completed January 24th and has been in use regularly since that date.

On March 1st the third telephone circuit was completed. This extends from Clyde, the end of the Chicago Terminals, to Aurora, a distance of 28 miles, with fifteen offices. These three circuits are all on double track.

On March 19th, the first installation on single track was completed between Aurora and Savanna, a distance of 106 miles, with twenty-three offices.

Up to this time, while many who personally investigated the matter were willing to concede its efficiency as applied to double track operation, they were very skeptical as to what would be the result on single track. In this distrust, they overlooked the fact that in our method of double track operation, the irregularity of reverse movements in reality made the requirements on such lines more exacting than on single track where opposing movements were perforce the regular method of operation. The results of this last installation were even more marked than on double track, and I am convinced that the handling of trains by telephone is not only much more satisfactory, but is really safer as well, and this opinion is shared by all who have personally looked into the matter.

Believing that the best was none too good for a train wire, we have in each case, with the exception of the Clyde-Aurora circuit, strung two 210 lb. copper wires and have made the installation as complete and perfect as we know

how. With the present market price of copper, the telephone circuit costs approximately $100.00 a mile and the station equipment about $50.00 per station. This is more expensive than the telegraph circuit, and the maintenance will be a little more difficult and the cost a little higher, but the results have proven so absolutely satisfactory, we feel the additional expense is fully warranted.

Our arrangement makes the circuit entirely self-contained, that is, the signalling and talking is all done on the same pair of wires. The signalling is done by semi-automatic selectors that enable the dispatcher merely by the depression of a couple of buttons in connection with a series of synchronous clocks to ring at will vibrating bells in one or more offices on the circuit. This is a much less laborious method of calling, and we also find a very great saving in time, the operators responding very much more quickly than is the practice with the telegraph. In the local offices we put a four inch vibrating bell, one large enough to be heard at a considerable distance, and when this bell lets go without any preliminary warning, the one thought of the operator is to shut it off and so he immediately answers the call. More often than otherwise the operators to avoid the annoyance of the signal bell forestall the dispatcher's call and report trains as soon as they pass.

In handling orders, the same general methods are observed as with the telegraph, any figures or names of stations occurring in the order being spelled out letter by letter, both in the giving of the order and all of the repetitions, and the name of the conductor on a "31" order is spelled out as well.

The use of the telephone is so quick in every way, and so much more flexible, the dispatcher is enabled to get far more detailed information of just exactly what each train is doing, even, when occasion requires, talking directly with

the conductor or engineer personally, and is thus brought just so much nearer the actual details of train movement. Only a personal investigation of the scheme can show how valuable is this information.

There has also been a marked improvement in the work of the men on these telephone circuits due to the fact that the conversations between the Dispatcher and the operators or other employes are of a much more personal character than obtains with the telegraph, resulting in much closer co-operation.

It is even possible to save considerable time in the actual putting out of orders. The Dispatcher copies the order in his order book as he talks it off, thus gauging, or rather reducing, his speed of conversation to his ability to write it down, as well as the ability of the operators to do so. Then when the operators repeat the order, they talk it off as fast as they can or much faster than is possible by telegraph.

The change in method in every case was made without a hitch and without any opposition worth mentioning. I had an idea that while possibly the dispatchers themselves might not openly oppose the change, their support might be of a passive character, but in this I was agreeably disappointed. The first circuit had not been in operation a week before a little spirit of jealousy was evidenced, directed against the dispatchers on the telephone circuit, it being so clearly evident they had the "snap" of the office. Soon all the dispatchers in Aurora office were desirous that we give them the same facilities, and now that all have been taken care of, there is not one out of the twelve that would willingly go back to the old method.

It is far easier to train telephone operators than to secure telegraphers. There is hardly a town anywhere on the line in which there are not young fellows, who by reason of their frequently being around the depot, are more or less

familiar with the railroad game, and who with a very little training would be perfectly competent to sit in as telephone operators. There is much to be gained by making use of men in their own home towns, or who have grown up along the Line. Our telegraph service was at its best when this condition existed to a considerable extent, and discipline has lessened in proportion as we have been compelled to import telegraph talent.

This increased use of the telephone has also opened an avenue whereby we can offer better employment to those unfortunately injured in our service, few of whom in the past have been able to learn telegraphy.

Another item worthy of consideration is the broadened field from which we can make dispatchers. In the past, the first requisite for a dispatcher was an ability to telegraph, and with the character and ability of telegraphers in general dropping as fast as it has during the past two or three years, we certainly can but expect difficulty in the future in getting satisfactory talent, even if this difficulty has not been greatly evidenced in the past. I maintain that a good, bright, young freight conductor, who has been actually carrying out the train orders, would make a better dispatcher himself and be better able to assist in getting other trains over the road than is the telegraph dispatcher, who, in spite of his occasional trips on freight trains, is a theorist after all.

The establishment of telephone circuits enables us to close unimportant offices wholly or a portion of the time, as a telephone instrument can be placed where the train conductors can readily get in touch with the Dispatcher, and report their trains into clear or get help if necessary.

Another important feature in the use of the telephone is the fact that it works even better in bad weather than in good—just the reverse of the telegraph—and if there is ever a time when good service is needed, it is when the

weather is wet and foggy. There is no exasperating interference with the dispatcher's efforts by reason of the relay in some way office being out of adjustment and the inattentive operator making no effort to see whether this is the case or not. The telephone is always in proper adjustment and because of the lowered static capacity of the circuits, works as if charmed.

With the telephone it is possible to arrange apparatus, for instance in the Superintendent's office, so that he can at any time listen to the actual work of the dispatchers and operators and thus check up any tendency to slackness. This has not always been possible in the past, as not all Superintendents were telegraphers.

The improvement in the handling of train dispatching by telephone has been so clearly demonstrated, we have decided to attempt to handle other messages in like manner and in a short time all business for the way offices on certain portions of our line (both main and branches) will be handled by telephone, this to include Western Union business as well. At junction points where branch telegraph lines are to be worked and at certain wire test offices, it may be necessary to maintain telegraph service, but at all other points all classes of business will be handled by telephone.

The field for substituting the telephone for the telegraph daily opens up before us almost faster than we can comprehend it, and the results we are obtaining from our experiments are a constant but very agreeable surprise. For instance, only about a month ago it seemed next to impossible to get satisfactory telephone service on single wire branch lines without completing the metallic circuit and this the volume of business did not warrant. However, within the last few days we have made successful substitution on two branch lines, one 18 miles long with three offices, and the other 49 miles long with ten offices. These branch wires

have been so arranged that while not connected permanently with the main line, they can be connected automatically at the will of the dispatcher or the way office operator, the signalling on the branch being done by means of ordinary bridged bells.

The unqualified success of our experiments with the telephone as a substitute for the telegraph, and the rapidity with which other roads are extending the work, convinces me that the next few months will make a great change in method of handling trains all over the country, one that will greatly benefit the service.

Mr. Ryder: Supplementing this paper I may give you an idea of what has been done in regard to train dispatching by means of the telephone during the last six months. On the New York Central road, an experiment on the main line was started a little earlier than that, but since that time, the following roads either actually established telephone circuits for the dispatching of trains or positive authorization has been given to them.

The Illinois Central leads the list in a pronounced degree. They have absolute authorization to extend the service on 2536 miles of road. The reason that they have come out so quickly is because they have wires on poles that were available. Of course, the expense for wire is a considerable item.

The Chicago and North Western have 478 miles.

The Rock Island has 333 miles.

The Michigan Central has 259 miles.

The Chicago, Milwaukee and St. Paul has 223 miles.

The Great Northern has 203 miles.

The Northern Pacific has 109 miles.

The Baltimore and Ohio has 105 miles.

The New York Central has 95 miles.

The Lake Shore has 88 hiles.

The Delaware, Lackawanna and Western has 62 miles.

The Pittsburg and Lake Erie has 60 miles.

The C. P. R. has 49 miles.

I have included in this list the Branch lines of the Pennsylvania Lines east, 225 miles of which have been operated by telephone for some considerable length of time, signalling being done by the bridged Bell method.

The Lake Erie, Alliance and Wheeling, 104 miles, which has been operated in the same way.

This makes a total of 5674 miles, which is either being actually covered, or will be in the near future. A pretty healthy baby for six months growth.

This able paper was especially well received, and was discussed at length by S. L. Van Akin, Jr., of Syracuse, N. Y., assistant superintendent of telegraph of the New York Central Railroad.

He said that to successfully despatch trains by telephone, on account of the important nature of the work, it was necessary for the pioneers in the field to do considerable engineering in bringing about a departure from established precedent, both in the method of construction and operation. Defects in local battery telephone sets, from a service standpoint, were carefully considered, some of which are as follows:

When a receiver is left off the hook, the bridging bells on a party line cannot be freely operated on account of the short circuit, and in case two or more parties are wanted, the first party called is obliged to "hang up" until the other stations are signaled, and, as sometimes found, the insulation on the hook becomes carbonized, thus failing to cut

the receiver out—or partially so—cutting down the ringing of bells, while it would not notitceably cut down transmission. When the receiver is removed from the hook, the transmitter circuit is closed as well as the receiver circuit which often times will cause interruption to communications between other offices on the line, due to speaking before listening, vibration from telegraph instruments, engines whistling or ringing bells, or noise from passing trains.

To obviate these objectionable features, it was recommended that a 2 m.f. condenser be placed in the receiver circuit, and about the time the New York Central was ready to place an order for equipment, we were able to obtain receivers of 700 ohms resistence. The 700-ohm receiver wired in series with the secondary winding of the induction coil (which is standard practice) and a 2 m.f. condenser across the line, brought the bridging resistance of the set, when operative, up to approximately 1140 ohms, and with twenty or more stations so equipped, and cuit in circuit, it was found that as many bridging bells in series with a 2 m.f. condenser would freely operate. To prevent interruption to communications between other offices, when listening in, it was recommended that a line key and a transmitter key be installed at the outlaying offices, the line key being locking, the transmitter key non-locking. In this particular class of work, as it is essential that an operator have the free use of both hands, it was therefore deemed expedient to design a telephone arm having upon it a transmitter and a receiver. The latest improvement in this connection is on exhibit.

With a transmitter and receiver mounted in a fixed position on an arm, it follows that if the ear is pressed to the receiver, the mouth is brought close to the transmitter mouth-piece, insuring good transmission; head telephones were not recommended for use except by the train dis-

patcher, who wears a chest transmitter, on account of the wear and tear on cord, and the liability to breakage, and a tendency not to speak directly into the transmitter with this type of apparatus.

Bridging bells were installed at every third station for emergency use only, as it was not advisable to use ringing current on the line except as stated (for emergency calling) for the following reasons: The first and most important is the liability to de-magnetize receivers; in this respect we have experienced considerable trouble at Ravena, N. Y., which is the monitoring station for our long distance telephone lines; the receiver at that point is de-magnetized and a new receiver required on an average of every thirty days, due to ringing in the wire chief's ear; second, ringing in operator's ear; third, confusion of bells ringing incessantly where the lock and block signal system is in use, as in our case; fourth, a bridging bell would be required at each station on the line, tending to cut down transmission.

With these facts in mind it was recommended to install the Gill telegraphic selectors on the old despatching Morse circuit, and to provide automatic sending keys at the despatcher's office. This was done, but proved a failure, first, because being too slow, and, second, because unreliable, due entirely to outside interference in breaking up the combinations. Aftetr much experimenting and hard work by all concerned the Gill telegraphic selector, new type, was finally installed, being the third installation tried out. It is operated over the telephone line, the service being very satisfactory and the operation absolutely reliable.

Arrangements are now being made to extend the original circuit to Little Falls, N. Y., with an additional eight stations, making a total of twenty-five stations, in a circuit seventy-three and one-half miles in length.

Our experimental circuit between Albany and Fonda,

forty-four miles long, was ready for service September 29, 1907, but was not made operative until October 2, as the railroad company were not able to meet the conditions of the nine-hour law (New York State, effective October 1, 1907), with telegraph operators, and, for obvious reasons, it was thought best to commence operations by telephone after the conditions of the law had been met. The spirit of antagonism toward telephone train dispatching has been very pronounced with us from time to time during the past nine months, but the issues have been successfully met.

I appreciate this opportunity to endorse what Mr. Ryder has said with regard to the practicability and superiority of the telephone over that of the telegraph in the handling of train movements.

Mr. Ryder's paper was fully discussed at the afternoon meeting in Executive Session.

On motion, adjourned to meet in regular session at 9:30 A. M., Thursday. Executive Session called for 1:30 P. M.

SECOND SESSION.

The meeting was called to order by the President, Mr. E. P. Griffith, at 9:30 A. M., Thursday, June 25th. In opening the proceedings the President said:

Before proceeding with our regular order of business, our Secretary has some letters to read.

The Secretary: I have letters and telegrams of regret at inability to be present from the following gentlemen:

H. C. Hope, St. Paul, Minn.

C. F. Annett, Goldfield, Nev.

Walter L. Connolly, Supt., C. I. & S., Gibson, Ind.

E. E. Torrey, Mobile & Ohio, Jackson, Tenn.

B. S. Jenkins, Winnipeg.

U. J. Fry, Milwaukee, Wis.

I think those are all the communications we have which have not been read.

The President: Before proceeding with the order of business I would like to state that just before I left New York I met a gentlman whom you all know, and who has been with us on many occasions. I know when I mention his name you will feel that he is here now. He wished me to express his regret at not being able to be present, and to say that although he was not present, he loved you none the less. I refer to our old friend, Mr. Belvidere Brooks.

I have the same message from our old time friend, Mr. C. H. Bristol. (Applause).

We will now proceed with our regular order of business.

The first item we have is a paper written by Mr. J. P. Church, Chief Clerk Telegraph Department, Wabash Railway Company. Mr. Church is not here so I would ask the Secretary to read his paper.

The Secretary then read Mr. Church's paper as follows:

COMMERCIAL REPORTS.

J. P. Church, Chief Clerk Telegraph Department,
The Wabash R. R. Company.

I find it about as difficult to write about Commercial Reports, as the average operator does to make them up, but have tried to include a few practical suggestions looking toward simple but systematic methods of handling them.

I assume that it is not desired to consider the question of improving the present rules as contained in the tariff book, and indeed they seem, if intelligently carried out, to cover all requirements fully, and suffice in the hands of the Telegraph Company's experts to reach all delinquents, especially in the collection of deficits on error sheets. We recently received for collection an error sheet amounting to 25c, on a message handled 21 years ago, and a system so far reaching could scarcely be considered inadequate.

It is difficult to lay down specific methods of instruction supplementary to the rules, on account of the difference in details on the various roads. I understand that the Western Union and Postal rules are practically the same and that the manner of making reports is consequently similar, and there is probably no greater difference between them than obtains in the practice of the different roads handling commercial business for the Telegraph Companies.

On the Wabash, the reports are sent to the Superintendent of Telegraph, where they are carefully audited and corrected, and sent to the several Western Union Superintendents, with consolidated statements on form 23, and a comparative statement with the same month of the previous year. The telegraph receipts, however are remitted by the managers direct to the Western Union Treasurer accompanied by form 65 (letter of transmittal), and a statement of manner and amount of remittance is forwarded to the Superintendent of Telegraph on form 1517, enclosed with the other reports.

Error sheets come to the Superintendent of Telegraph from the Western Union District Superintendents, and are copied in the error sheet book, and then sent to the various offices with a receipt card and a sufficient number of postal cards, form 47 for adjustment. The receipts are carefully checked in and tracers kept going in such cases as are necessary, until the error sheet is returned. The money covering deficits is returned to the Superintendent of Telegraph with the error sheets and overcheck vouchers, and remitted by him at the close of each month, together with a statement covering the error sheets returned.

When Mr. Kinsman turned this matter over to me he suggested that the best way to secure prompt and correct reports was to insist upon careful and comprehensive records being kept by the managers, and I believe this is

the key to the whole situation. The time for the manager to begin to make up his report is when he handles the first message, and he should be required to keep a proper file of all commercial business separate from the railroad files, and each day by itself.

For the average office, a simple file of about three divisions will be sufficient for the current month.

The first division should be large enough to hold all messages handled during the month.

The other two divisions will require only sufficient space for the messages held out to go in with the reports in one, and the error sheets and correspondence relating to them in the other. If nothing better is available, a table drawer for the messages and two large envelopes for the other divisions will answer.

Each day's business should be assorted carefully on the following morning, and placed in alphabetical order by states, and after proper entry in the check ledger, copies should be made of the Uncollects and Guaranteed messages, and the service messages relating to them; also the Sent Free Half Rate Frank, and all Government messages that go in with the reports, as vouchers for tolls, and these copies filed in proper order with the other messages for that day; care being taken to wrap or tie up each days business separately for convenient reference. Service messages should be attached to the messages they refer to, with pins or pasted on one corner.

Daily records should be made showing amount of the receipts, and the number and kind of messages handled, both sent and received, so that this information will be tabulated and ready for use in making up the reports. This record can be kept on the check ledger by writing suitable headings at the top, and will only require half of one page each month.

The original messages held out to go in with the reports can be kept in proper order in the second division of the file, until reports are made up at the close of the month, leaving the third division for error sheets and correspondence of the current month.

Press or carbon copies of the reports should be made and filed with the messages of the same month.

If the daily register (form 40) is used, that and the check ledger can be kept on top of the messages in the first division of the file.

In addition to the three division file, the manager will need a place to store his stationery supplies conveniently, with a separate shelf for the eight bundles of messages that he is required to keep on hand.

It will scarcely be necessary to provide a money drawer, as the manager can use one of his vest pockets for that purpose. The only Western Union office I ever managed took in between twenty and thirty dollars a day, and I carried the Western Union cash in one pocket and my own in another. This arrangement worked very well—the only difficulty being to preserve a proper balance between the pockets.

If the managers can be induced to adopt some simple system of filing the messages and daily make copies of such as will be required to go in with the reports, a few minutes work each day will keep their files in good condition, and enable them to make up their reports easily and accurately at the close of the month, and reduce the number of error sheets.

Instructions to managers should be as brief and simple as possible, but they should be constantly admonished to study the rules carefully and obey them implicity, referring doubtful points to the Superintendent as they come up, and if they follow the practice of making up their reports

daily they will have ample time to obtain advice on all obscure points and be prepared to send in their reports without delay at the end of the month.

Experience indicates that operators are frequently careless about complying with the rules to see that all messages are written on or attached to, the sending blank, and that they often omit the filing time on sent messages and sometimes neglect to endorse the time on messages received, and time of calls on delayed messages. They should be specially cautioned on these points and also impressed with the necessity of taking receipts for messages delivered and filing these receipts with the day's business.

The Secretary: We have a paper written by Mr. O. C. Greene, Superintendent of Telegraph of the Northern Pacific Railway Company, on the "Reduction of Telegraphing by the Use of Printed Forms." Mr. Greene is not here, but the paper has been brought us by Mr. Dildine. Unfortunately Mr. Dildine is not in very good voice this morning, and has asked me to read the paper. In fact, I may say that Mr. Greene himself wrote and asked me to read the paper. Mr. Greene was my boss at one time, and whenever he said that he wanted anything done, we were very willing and ready to attempt it at any rate.

The Secretary then read the following paper from Mr. Greene:

REDUCTION OF TELEGRAPHING BY THE USE OF PRINTED FORMS.

By O. C. Greene, Supt. Telegraph, N. P. Ry.

When I was requested to write a paper on "Reduction of Telegraphing by the Use of Printed Forms", I was inclined to hesitate about complying, as it seemed to me there was not much that could be said to a body of men so well

posted on this subject, as all of you undoubtedly are, that would be either interesting or instructive.

There is no doubt that where there are any considerable numbers of routine reports of similar character, the use of an intelligently arranged blank form materially reduces the amount of telegraphing. When the requirements are known, it is a comparatively easy matter to make up a blank form, with suitable columns and headings, to meet them. An arbitrary designating letter should be placed at the top of each column and, when necessary, at the beginning of the line, which should, of course, be transmitted by the sending operator, to indicate to the receiving operator which space to use. Care should be used in selecting this index letter to use Morse characters which will not be apt to combine easily with those of the numbers or words most likely to follow it.

To obviate the difficulty the receiving operator is likely to experience in finding the proper place, especially if the blank is large and the sending operator inclined to be very ambitious, the spacing should be rather liberal and the subdivisions of the form should be separated by heavily ruled lines; otherwise, so many errors, due to operators using the wrong spaces, may follow, that the saving effected by the use of the blank is likely to be largely off-set by the number of messages made necessary to secure corrections.

Multiplicity of forms is objectionable. As a general thing the telegraph tables are pretty well crowded and considerable time may be lost by operators looking for the proper blank when there are a great many to select from. While the use of blank forms is undoubtedly advisable when the amount and character of business justifies it, there is, therefore, a chance of overdoing it. Conditions frequently change, requiring additional or somewhat different information, and it will be found that many times a slight change

in some of the stablished forms can be made to take care of this change in conditions, rather than making a new blank for the purpose.

The Northern Pacific Railway, which I have the honor to represent, being long and the general office located at one end, necessarily carries on a great deal of its business by wire, hence a large number of forms are in use, which greatly reduces the volumn of telegraphing.

Should any of the gentlemen present be interested, I will be glad to present them with complete sets of our blanks upon application.

President Griffith. With the consent of the meeting, I would like to suspend the order of our proceedings for a few moments.

We have with us a gentlemen who intended to be here yesterday morning, but, unfortunately, the dates were misplaced. I know you will all be glad to hear from him now, and, therefore, I have much peasure in introducing to you, Mr. Narcisse Lapointe, Acting Mayor of the City of Montreal.

Acting Mayor Lapointe: Mr. Griffith, and gentlemen, in extending to you, on behalf of his Worship the Mayor of Montreal, a hearty welcome to this city on the occasion of your twenty-seventh annual convention, it is not necessary for me to address you at any length. The vital importance of the interests you so worthily represent, commercial, professional and national, is universally recognized. But, in no country has the Railway Telegraph been reduced to such an exact science as on the North American continent, and nowhere does it play such a prominent and significant part in the national life. It is upon you gentlemen that the press of this Dominion, no less, (I might say) than the press of the United States, in a large degree, depends for its news

service. It is upon your fidelity, accuracy and competence, that the fate of immense commercial, inter-state, and even national interests often depend. You play a part in the life of both countries second to none among those employed in the service of public utilities and you play that part ably, independently, and fearlessly.

A special interest attaches to this occasion, as the second upon which you hold your annual convention here—being the first in a great many years—for Montreal is the headquarters for the Dominion of Canada, of every great telegraphic service of the Dominion; in fact, for telegraphic service, Montreal is the Chicago and the New York of the United States combined.

I feel sure that your meeting here will go far to strengthen the bonds of friendship which unite you and your fellow superintendents on this side of the imaginary line, and that nothing but good can come from such fraternal union.

It but remains for me to bid you again a hearty and sincere welcome to the Canadian Metropolis, and to express the hope that your brief sojourn here will be frought with benefits in which we shall mutually share.

I am sorry that I was not here with you yesterday. I understood that your meeting opened on the twenty-fifth. However, I am very glad to learn that Alderman Sadler was here to welcome you yesterday, and that he did it so well.

Mr. Camp: I feel that I must apologize to Alderman Lapointe for the error which has occurred.

The first programme I drew up, through some inconceivable carelessness on my part had the wrong date. I telephoned to the office yesterday, and found that there was an error. I am very sorry that this should have occurred, and personally apologize to Alderman Lapointe for mis-

leading him, unintentionally it is true, but misleading him all the same.

The Chairman: The fact that there is one day's difference in this matter, perhaps makes it all the more enjoyable to us.

We are always glad to meet the officers and representatives of the different cities wherein we hold our conventions; and, on behalf of this Association I wish to thank Alderman Lapointe for the kind courtesy extended to us, and at the same time to assure him that we are having a very excellent time, and are being well taken care of.

The President: We will now proceed with the order of business which we had started.

Mr. Ryder: There is one point brought out by Mr. Greene's paper. I understand that he uses code letters at the heads of columns on report blanks. Does it not occur to you that there would be some difficulty in picking out code letters which would be clear in the Morse transmission? That is what we have endeavored to do in the past, and when the change was made to handling the business by telephone (as has been done on two or three sections of the Burlington Road) we are right up against the proposition of a symbol letter which is all right telegraphically, but is all wrong telephonically.

Now, on two sections of lines we are handling all the business by telephone, and the most serious trouble that we have bumped up against is this question of the form—the letter designation for columns. We are going to handle more business by telephone in the future than we have done in the past, and this is one of those items that we have to bear in mind, in making up our blanks in the future.

Mr. Selden: The thought occurs to me that possibly it is all very well to head your blanks for telegraphic pur-

poses with a letter character, and to choose a number for your telephonic lines, say, 1-1, 1-2, 1-3, and so on, instead of A-B, B-C, and so on, so that instead of transmitting by telegraph, they will use the alphabetic designation by telegraphic and by telephone use the number designation.

Mr. Ryder: The objection to that suggestion is that you are liable to confuse the numbers indicating the columns with the figures which appear in those columns.

Mr. Selden: In any case could it not be designated by a letter and a figure, say, 13-B, or 14-X, or 15-X, or whatever it may be.

Mr. Ryder: We will have to have some different method from anything in existence at the present time, I think.

Mr. Camp: Why should it be necessary to have any indicating letter or figure, if you are using the telephone? It is perfectly easy and simple to mention the heading of your column when you are speaking to the party who is to make the entry. It seems to me that it is not necessary to have any indicating letter or figure at all.

Mr. Ryder: The only reason for an indicating letter or figure would be for the sake of brevity. I have in mind one column which we use on our road, which is headed "Burlington Route, 34 foot Box". We would have to get something shorter than that, and one word would possibly do it. The difficulty is to get words which will do it satisfactorily under the new conditions.

The President: If there is no further discussion on this paper we will pass on to the next subject; but before doing so I wish to read to you a telegram which has just come into my possession. It is headed "New York State Telegraph". and is dated, New York, March 6th, 1851.

"This despatch has just been received from Albany for R. W. B. J. Harnott—G. S. of G. Send a dispensation for

three degrees of Masonary, and charge same to Washington Lodge No. 85."

Mr. Selden: Have they ever been able to find out where the delay occurred?

The President: We will now proceed with our regular order of business.

Our next item is a paper on "Dry Battery", by Mr. U. J. Fry. Mr. Fry is not here, but I understand that the paper is in the possession of Mr. Davis, Chairman of the Topics Committee. I would therefore ask Mr. Davis to read Mr. Fry's paper.

Mr. Davis then read Mr. U. J. Fry's paper on "Dry Battery", which is as follows:

DRY BATTERY.

By U. J. Fry.

We beg to report to you the final results of our experiment with dry battery block wire service between Brookfield and Waukesha, referred to in our note of last year, to effect that the 32 cells used, failed after three years service, and means an expense of $5.12 as against $102.00 first cost and maintenance for three years of 32 cells gravity battery.

As applied to the service on a Railway operating 2000 miles of block signal service and using our present form of block wire we estimate the 4000 cells of gravity battery necessary, first cost and maintenance, for three years at $14,000.00 while double the number of dry cells (8000) will cost $1280.00, or a difference of $12,720.00; $4,360.00 per year or $2.18 per mile of road per year.

While constructing a telegraph line along our Coast Extension Railway we found it impossible to prearrange for gravity battery service and are using dry battery temporarily by connecting up a sufficient amount to operate a

wire one hundred, or one hundred and fifty miles in length, inserting a sufficient amount of resistance to bring the current down to about 50 M. A. while the circuit is short. When more wire is added we cut out resistance from time to time to equal the wire resistance added, maintaining as near as we can 50 M. A. current.

You can readily appreciate that by using a large number of cells, and inserting resistance, the discharge from each cell will be exceedingly low, the expense small and convenience afforded us in that, that we can carry the battery with the construction outfit until needed, when we can set it up in almost any place and pay no further attention to it except to cut out resistance occasionally. We used a set of dry battery in this way for six months, when it failed, at which time we had arranged for gravity battery service.

While it is not possible at all times to find a safe place for gravity battery to operate local sounders we found it very convenient to use 50 ohm sounders and keys only until we can construct station houses and arrange for standard instruments.

In these concluding lines on dry battery we find we have been unable to give you as much information as we should like to have done, and in lieu of what we did not say, and assuming you will permit, we thought perhaps a few of our shop notes might serve to interest some of your younger men in the service, and I submit the following:

To determine the number of cells of gravity battery necessary to furnish approximately 30 M. A. current for 1, 2, 3, 4 or 5 wires, when the resistance of each is about equal, select one of average resistance, add the relay resistance; multiply by constant given below, and opposite the number of wires under consideration. The amount shown will represent the total number of cells required, which should be

divided and half the number placed at each end of the circuit.

Number of Wires.	Current M. A.	Constant.
1	30	.032
2	32	.034
3	34	.0365
4	36	.039
5	38	.0415
1	45	.049
1	50	.055
1	55	.061
1	60	.066
1	65	.071

While it is not theoretically correct, this formula will be found sufficiently so for ordinary cases.

It is understood that when using gravity battery the current will be reduced about 2 M .A. for each wire added on account of the internal resistance in the battery, while with dynamo current the drop, if any, will not be noticeable.

In each of the cases shown, when all wires are closed, each will receive approximately 30 M. A. If one should be opened, the current in each remaining closed will rise about 2 M. A., etc. Should three be opened, the current in those closed would rise 6 M. A.

Not more than four wires should be fed from the same source, because the variation during damp weather, when it is necessary to adjust high, becomes so great and margin small the wires will not work well. Five wires would cause a variation of 10 M. A., and you can appreciate what this means under such conditions.

When inspecting our main line battery, or for testing one or more cells of dry or gravity battery, we find it convenient to have a small compass with us. One that costs 25c will answer e, and by making a few tests

with battery we know is bad up to one we know is in good condition we can form some idea as to what reading we should have and decide accordingly.

Place your compass conveniently near the one or more cells, bring a wire from one pole of the battery to the compass, place it on the compass immediately over and parallel with the needle, hold it firmly with one finger, and when the needle is quiet complete the circuit with a wire from the other pole and note the reflection of the needle.

While you, no doubt, are familiar with these matters, we thought perhaps some of your men may have forgotten, and it is for such we respectively submit these items.

Mr. Davis: Mr. Fry has forwarded a key to the Secretary, as a sample of the key he is using. It seems to be just the reverse of the ordinary key, inasmuch as when you open it, it is closed, and when you close it, it is open.

I do not feel qualified to explain the workings and advantages of this key as they should be explained, and would ask our Secretary to find someone here who knows all about it to do so.

The Secretary: I think Mr. Ghegan knows as much about it as anyone else in the room, seeing that he is directly connected with the manufacture of the key. I would ask Mr. Ghegan to explain the key.

Mr. Ghegan: It is a key that Mr. Fry designed for us, for the dry battery in a telegraph system.

The object of having the circuit closer on an open circuit key was so that the operator would not have to learn anything new when he starts to transmit with this key. He throws the circuit closer open in the ordinary way, and that places the dry battery in condition to transmit the message. When he gets through he closes the circuit closer in the ordinary way, and that not only throws the dry battery

out of circuit, but it also leaves it out, so that you do not have the battery in the circuit, and it is not put into the circuit by pressing the key—which is something that is very important. It frequently happens that a book or some other heavy object gets on the key, pressing it down and closing the circuit. With the ordinary key this would put the battery into circuit, but with this key it is not the case.

The key closes the battery out, but leaves the relay in to receive signals.

Mr. Selden: Does this require a battery at each station sufficient to work the whole line?

Mr. Ghegan: Yes. It is an open circuit key.

Mr. Williams: What battery do you use for seventy-five miles of line, say?

Mr. Ghegan: I think Mr. Davis would be able to answer that.

Mr. Davis: I am afraid I cannot.

Mr. Williams: I have 154 miles of dry battery block work, and I use about one and a half cells to the mile.

Mr. Camp: What gauge wire do you use?

Mr. Williams: No. 8.

We have used it for quite a while, and the battery has shown no depreciation whatever.

The President: Is there any further discussion on this paper?

The Secretary: Inasmuch as there does not seem to be any further discussion on Mr. Fry's paper, I will take the liberty of changing the subject.

When we met in this Hotel thirteen years ago, we had with us many men who are not here today, among them was a gentleman who took charge of our party from the time we

left Detroit till we returned. He is not now in the telegraph business, but, apparently has not lost interest in this Association. I refer to Mr. J. W. Fortune, who was Assistant to the General Manager of the Grand Trunk Railway, as well as Superintendent of Telegraph.

Of those who were present upon that occasion there are about ten here today, and I am sure they well remember what perfect arrangements were made for our accommodation and entertainment, and how very little we had to do ourselves in the way of getting around, for Mr. Fortune seemed to have anticipated everything possible, and to have made very complete and perfect arrangements.

I sent an invitation to Mr. Fortune to attend this meeting, and asked him to make a special effort to be with us here, so that we might greet him after his long absence. He has been unable to come, but I have just received a letter from him which speaks for itself.

Mr. Fortune says:

710 Chamber of Commerce, Detroit,
June 24th, 1908.

Dear Mr. Secretary: I am sending you by special messenger via General Offices of the Grand Trunk Railway "73" envelopes, all about the Goderich Summer Hotel. Every word of which is worth reading, if I do say it myself "as shouldn't." Judging from my own experience as to numbers usually present, I think I have sent sufficient to give a copy to every member present, if not, I shall be glad to mail others to the home addresses of any applicants. I wired you today my regrets and best wishes and asked that the committee on next meeting should not decide until hearing from me. I recognize the fact that perhaps a majority may desire that the next meeting should be in the United States, but as I think you have about exhausted the points of interest there, you may perhaps wish to try Canada once more, therefore, I beg to suggest that Goderich, Ont., "the coolest, cleanest, healthiest, and prettiest town in Canada"

may be considered. It is not a city but a beautiful, restful, interesting town and a meeting there would be somewhat out of the ordinary. Moreover if date were left open, say from the 15th to 25th of June, I think I could arrange a daylight yacht sail of eight hours from Detroit to Goderich for first day, then two days at the Goderich Summer Hotel which has a good convention hall, and a return steamer trip that would be remembered by everybody for many a day.

The Hotel rates would be reduced to $1.50 and $2.00 a day for each person on the American plan, and the party would have as a delightful rural and marine view as there could be found on any drives on this Continent, while our modest evening entertainments would also be much appreciated by the ladies.

I may have a little reputation among the older members for "trying to do things", and if you will leave yourself to my tender mercies once more, I will again try to "do you all up brown."

We have no bar in the hotel but plenty of the finest mineral water out of the earth, and if you decide to come as a body, I would like to have Selden and Kinsman see to it, that Ryder gets all the **long** drinks he desires.

If you cannot come as a body please remind each one of the members that the latch string is on the outside for everyone of them, their sisters, their cousins and their aunts.

It will soon be 26 years since a half dozen of us met in Chicago and formed our Association. Among the numerous Associations I have known during my railway life, I know of none which has been productive of more good and certainly none in which good fellowship and unselfish intercourse has been so genuine and so pronounced. It is because of this good feeling that I greet each one of you as **old and new friends** and which makes me desire to have you **all with** me once more.

With "73's" and best wishes, I am, as ever,

Your sincere friend and associate,

J. W. FORTUNE.

The President: The next item on our list is the paper prepared by one of our Past Presidents, Mr. E. A. Chenery, Superintendent of Telegraph of the Missouri Pacific Railway.

This is perhaps one of the most important papers to be presented at this meeting, and I would ask your very special attention to it.

Mr. Chenery: When the Topics Committee assigned me the subject of "Adverse Legislation", without any further information, and asked me to write a paper on the subject, I thought this was a sample of "adverse legislation" indeed. I did not know exactly what their idea might be, so I took the liberty of altering the title of the subject, and calling it "Adverse Legislation—Its Possible Ultimate Effect on Telegraphers.'

Mr. Chenery's paper is as follows:

ADVERSE LEGISLATION—ITS POSSIBLE ULTIMATE EFFECT ON TELEGRAPHERS.

By E. A. Chenery, Supt. Telegraph Mo. Pacific Ry.

It is generally admitted that of the present officials of our railroads, fully eighty per cent. started their career by way of the telegraph route, and it at the same time is equally well known that no other avenue offers such an educational and sure journey to success, particularly in the operating, accounting or traffic departments, if proper energy on a sound foundation is applied.

No branch of the service is so full of promise to the young man fresh from school and with a desire to make for himself a name in the army of railroad workers, as is that of the telegraph department as a starter, and this clearly is apparent to those who consider their opportunities rather than their comfortable convenience; who know that honest

and unceasing endeavor must succeed and that slipshod methods and lack of interest cannot but fail.

The young telegrapher accepting his first position is in the Kindergarten class and cannot progress through the several grades to official position without constant and earnest application. He usually makes his entry into the service at some way station—on a branch road more than likely—where his duties consist principally in recording and reporting the passage of the few trains that pass his station during the hours he is employed. The actual labor involved is so small as to almost warrant the charge of extravagance for his meagre services and were it not that his presence may be desired in a possible emergency such as an accident or a disaster, there would be little reason for his position.

But the young man is engaged and we will admit is employed through no particular desire on the part of the management to be philanthropic. Let us see what his opportunities are: The actual work assigned leaves so much idle time on his hands as to permit him with profit to utilize many hours in perfecting himself either as a more proficient telegrapher or in familiarizing himself with the duties belonging to the agent or other employes at his station.

The art of telegraphy is not mastered in time measured by days, weeks or even months and there are few telegraphers of to-day who will claim they earned the right to wear the title in less than from four to five years. This is partly due to the fact that in some cases after serving as an apprentice for from six to nine months and then securing a position, the temporary goal seemed to have been reached and continued effort is slackened on the theory, I take it, that there is no further necessity of running after the street car is caught.

If advancement is desired and expected it surely must

be deserved and the result can only be obtained after a supreme effort to perfect oneself is made.

Every telegrapher at such an initial station, has opportunities to practice many hours daily and to become acquainted with many of the duties required of telegraphers more advanced and of the station and train work generally. He has access through passing telegrams to the best thoughts of his superiors and may be in close touch in advance of the press with the news and gossip of neighboring towns and cities and should be the best posted man in the village.

Ambition when accompanied by applied effort and recognized though suppressed ability, will not be permitted to tarry long in such a place, as the dispatcher, the agent or some other representative will have observed the traits and qualities of merit manifested, and a summons in the way of an offer for a better position is forthcoming. The new position carries with it, more work, greater responsibility and opportunities for acquiring knowledge of the ticket, freight, accounting, commercial and railroad telegraph, express and other details and to become more closely identified as a part of the great machinery going to make up the large industry of a railroad.

As this knowledge becomes broader, a larger field is opened. An agency presents, is accepted and the young man then becomes the road's one and direct representative and is usually regarded as the one person to whom inquiries of all sorts may be directed, with a reasonable certainty that a correct and intelligent reply will be received.

Continued application and association through personal contact and correspondence with general officers and the patrons of the Company has by this time added much to his education and self-reliance and if his energy and temperament are cultivated further in the right path, success is now in sight.

Whether he be fitted to advance to the position of train dispatcher, as an expert telegrapher in one of the more important offices, or to a more representative position among the people, in the traffic department, or from his association and acquaintance with the commercial world, he chooses to engage in other pursuits, the opportunity is bound to present.

Of the 80% of railroad officials who began as telegraphers, by far the greater number are of the operating department. Train Dispatchers are advanced to Chiefs, then to Train Masters and in succession to Superintendents, General Superintendents, General Managers and Presidents. In the front ranks of the traffic and accounting departments are many who started in the Kindergarten class of telegraphy and worked their way through the position of agent, cashier, ticket clerk, etc., to traveling auditors, freight or ticket agents, to more responsible positions at the head of such departments.

Within a period of two years past, following their efforts and success in very thoroughly effecting a strong organization, a spirit of unrest, in keeping with the times, has pervaded the ranks of telegraphers engaged both in railroad and commercial fields and it only needed the torch of disgruntled agitators to fan the flame through a hitherto unthought of method—legislation—into a blaze that it seems to the writer is fraught with possible disaster to the profession.

There are three classes of legislation, Internal, State and National, that at this time seems to contribute as a demoralizing factor against the welfare of the telegrapher.

Internal legislation may be considered that which applies as between the telegraphers as a class, and the corporations with which they are identified.

Nearly all the trunk lines at this time, following the custom of having working schedules with employes in the

various trades, have entered into similar relations with their telegraphers and it is but fair to say that such a policy if made and carried out with the fundamental purpose of preventing abuses to a particular class, is beneficial in a general way, although personally the writer cannot believe that all the rules and particularly those relating to seniority is conducive to the encouragement of ambition and advancement.

Some of the schedules are secured after a long struggle, due to the fact that the committee delegated to frame the requests often assume an attitude of hostility to the management and convey the impression that the employer is a sworn enemy and must be so treated. In the preparation of such agreements the principal object should be to insure as nearly as possible, a uniform working arrangement for all divisions, providing reasonable hours of service, an opportunity for a hearing in the event of fancied or real injustice and compensation commensurate with the duties and experience required, location and other conditions being also considered.

These schedules are made to be observed and managements are anxious that the provisions are not violated, recognizing in them as sacred an obligation as is expected of the employes in complying with the rules laid down for their guidance by the Company.

There is a certain element, however, who rebel at any order that may be issued; who look upon a letter of inquiry for desired information, as an attempt to harass them and the writer has known of several cases where the employe before making reply to such queries, has first communicated with his chairman to ascertain if the superintendent or other superior officer was not transgressing upon what he considered the conferred rights of the schedule.

Such an element find it very convenient to complain of alleged violations on the part of their superior officers and

at the same time criticise the actions of their selected committee in permitting the practices which they consider burdensome, to continue. They are usually handy with pen and speech in vituperation and consider an ideal schedule only that which contemplates a stated minimum salary with liberal compensation in addition for handling tickets, freight, telegrams, express, mail and all other duties that may be assigned. These extreme examples are not altogether rare and are of such a number as to breed discontent among the larger amount of employes who are taught that their awakening can only result from a following of such precepts.

Could these employes be but brought to a realization of the sense of allegiance they owe themselves and their employer and strive to qualify and merit promotion, it stands to reason that their prospect for advancement would be greater.

What commercial business house could succeed if their salesmen banded together in an effort to force rigorous rules and to prevent any one man, regardless of his experience, from serving at a lesser rate than his older and necessarily more competent comrade. Would the head of such a concern feel disposed to offer a partnership in the business to one of that class of employes, or would he rather choose from among those who had at all times proven competent and loyal to his interests?

Not content with the working schedules they had entered into with their employers, presumably in good faith, the telegraphers as an organization conceived the plan of enlisting the efforts of their State and Federal representatives in an endeavor to secure shorter hours of service, relying on their organized strength to maintain the present or an advanced wage scale and State and National legislation relating to the employment and regulation of telegraphers has been active within the past two years.

Maryland was the first State to enact a law prescribing eight hours for telegraphers engaged in reporting trains, and the example was soon followed by other States, in many of which the law was to become effective sixty days from date of passage, allowing the railroads scarcely any time for preparation. In seeking this legislation, the telegraphers who were delegated to assist in having the acts become a law neglected to call attention to the fact that train dispatchers and telegraphers working tricks requiring constant and close application were then and have been for years, working but eight hours daily, and the attempt was made to have such hours apply to all without regard to the responsibility assumed; no distinction being made as between a dispatcher directing train movements and telegraphers who mechanically receive and deliver such instructions to the trainmen who are to obey them.

No one familiar with the work at the various stations of a railroad would honestly make the claim that the "mental strain" on a telegrapher on duty at a station where the number of train orders received varied from two to ten each month or even that number in each 24 hours, was particularly severe or compared in any manner with the duties in a dispatcher's or heavy division office, where close application is required and the work correspondingly heavy. In the one case the hours of duty may extend over a period of eleven hours each day, but the actual work is not heavy and there are in many cases long periods with nothing whatever to do. In the other case, the hours of duty are fixed at not more than nine and many at eight or less.

A case where one accident resulted in great loss of life which occurred through the negligence of a telegrapher failing to display his signal to one of the trains involved, has been recited before every committee having such bills to consider. The claim was made that the telegrapher at fault

was overworked, but the full facts in the case of his companion operator going to a neighboring city without securing permission from the dispatcher or superior officer, or with their knowledge or an understanding made by the two men to double, was not explained.

In a few of the bills introduced, a modification was suggested that the law should apply only at stations where the number of passenger trains passing in a 24 hour period exceeded eight in each direction, but this attempt to regulate the hours of service to the work performed met with vigorous opposition and protest and demonstrated the fact that methods absolutely unfair are resorted to in an endeavor to gain their point.

While these and hundreds of other bills directed against the railroads were being discussed in the several States, a bill was under discussion in the House and Senate providing a maximum of 16 hours during which railroad employes affecting train movements, would be allowed to labor and stipulating the number of hours of rest such employes should have before resuming duty. No particular class was mentioned and in the last days of the session after the bill had been favorably reported to both Houses, a proviso was added by the House to the second paragraph reading as follows:

> "PROVIDED, That no operator, train dispatcher or other employe, who by the use of the telegraph or telephone, dispatches, reports, transmits, receives or delivers orders pertaining to or affecting train movements, shall be required or permitted to be or remain on duty for a longer period than nine hours in any twenty-four hour period in all towers, offices, places and stations continuously operated night and day, nor for a longer period than thirteen hours in all towers, offices, places and stations operated only during the daytime, except in case of emergency, when the employes named in this

proviso may be permitted to be and remain on duty for four additional hours in a twenty-four hour period on not exceeding three days in any week."

In this form the bill was sent back to conference and after further discussion, a second proviso was added reading:

"PROVIDED FURTHER, The Interstate Commerce Commission may after full hearing in a particular case and for good cause shown, extend the period within which a common carrier shall comply with the provisions of this proviso as to such case."

The bill so amended passed both houses and was signed March 4th, 1907, to become effective one year after its passage and did go into effect on March 4th of this year.

I take the liberty of quoting from a statement made by Mr. C. R. Gray, Vice-President of the Frisco Ry., who served as chairman of the special committee of railroad representatives appearing before the Interstate Commerce Commission on February 27th last in a hearing on this bill:

"Inquiry among the important railroads developed the fact that to keep the train order telegraph offices open for the number of hours that they were kept open in November, 1907, and comply with this law as to hours of service would necessitate the employment of 15,000 additional operators. Based upon the rate of wages then prevailing, it would mean an added expense to the railroads of approximately $10,000,000 per annum.

The Telegraphers' organization had in the meantime issued circulars indicating its contention to be that if the railroads would pay a minimum of $80 per month, they could secure enough competent telegraphers who had gone into other business. Of course it would be impossible to pay this rate of wages to secure new employes without equally applying it to those already

in service and upon this basis the additional cost to the railroads in the United States would be approximately $20,000,000 per annum.

The amounts stated are given in no sordid sense as opposing the expenditure of any amount for that matter, to insure safety, but solely in order that the public may know the cost which in normal times will attend the enforcement of this law. Capitalized at 5% it means an investment of $400,000,000, which would provide automatic block signaling for 160,000 miles of double, or 266,000 miles of single track, the latter more by approximately 29,000 miles than there are in the United States.

* * * * *

It is a fair assumption that if this case could have been heard last fall, the railroads could have made such a showing as to the impossibility of securing men, that an extension for that cause alone would have been within the bounds of reasonable expectation, but effective in November, as all know, there was a tremendous slump in the income of the railroads, which still continues. In order to meet this condition, the roads have made strenuous efforts at retrenchment. A great many telegraph offices absolutely necessary in times of normal business have been dispensed with entirely. This had made available a number of operators who in times of normal business could not be secured. The committee concedes that there are telegraph offices where the men should not be required to work in excess of nine hours. It contends, however, that there are a greater number where the telegraph train order responsibilities are so immaterial that relief in such cases is reasonable and just; and further, that the commission should have authority, when a railroad has pro-

vided automatic block signals protection, removing thereby any opportunity for the operator to be instrumental in safety in any degree, to exempt such carrier from the operation of this law on that portion of the railroad so protected. It believes, and this belief was strengthened by conference with a great number of Senators and Congressmen, that there is a misconception as to the relative duties of a train dispatcher and a telegraph operator. A number of Congressmen felt the term to be synonymous and the responsibilities to be the same.

* * * * *

One of the great difficulties in this law as viewed by practical railroad men, is that it does not bear equally. It is hard to conceive the logic which allows an engineer and conductor to remain on duty for sixteen hours and limits a telegraph operator to nine. It is also difficult for one to comprehend the logic which permits one telegraph operator to remain on duty thirteen hours, but limits another to nine. But by far the most alarming feature in connection with this portion of the law, is that before it becomes effective the law served to defeat the purpose announced in its title, i. e., 'to promote the safety of employes and travelers upon railroads,' in that a number of the carriers were able to and did testify that they have already been compelled to curtail the block signal protection afforded on their lines, and had abandoned any immediate intention to extend it, first on account of the arbitrary cost involved in obeying the law and second because they know from practical experience that in times of normal business, a force of operators competent to handle the block signal system could not be obtained if only nine hours can be worked."

Considering the welfare of the telegraphers, I cannot believe that shorter hours of service was wanted or desired so much as a maintenance of an established wage scale and constant employment and the advantage of fitting themselves for promotion. No request by a committee for a reduction in the regular hours of service was ever made to my knowledge and these experiments in legislation of licensing telegraphers, the prohibition of employing anyone under 21 years of age and other similar measures that have received attention, were directed at the railroads through the efforts of the leaders of the telegraphers' organization to force a closed shop and to create a demand that would apparently benefit the present employes, but which is now acting as a boomerang.

The telegraphers, in what I believe mistaken zeal for the general good of the profession, have in every way possible, discouraged the teaching of the art and as a result the timber from which such material has been made of recent years has not been such as to justify the faintest suspicion that the percentage of future officials will be among the high figures of the past. The president of the telegraphers' order in discussing this feature at Washington recently, admitted that less than 365 students each year was authorized and permitted to be taught telegraphy by members of his order, although claiming a present working force of upwards of 53,000 telegraphers in the United States. At this rate of sanctioned manufacture, the last of the 53,000 telegraphers now employed would be released from active service in approximately 145 years. These figures would be changed somewhat if the mortality was lengthened or comparatively few additional positions created.

The biblical paragraph "What profiteth a man" may be converted into "What profiteth the telegraphers as a class, if they gain a few additional hours of idleness by losing their prospect for advancement."

A few are temporarily benefited in the shortening of their working hours, but is this conducive to a promising future? The passage of such laws necessarily has a demoralizing effect. Its tendency is to provoke discontent and stifle ambition; it encourages a revolution in methods and its ultimate effect cannot but be harmful to the telegraphers as a class. Already some of the roads having adopted the telephone as a substitute for the telegraph in the handling of trains, their officers wonder why they were so long in discovering its advantages.

Other roads are falling into line and it is safe to say that within a very few years the telephone will be in service by all the roads for such purposes of communication as it requires. When this becomes the universal practice, the offices now manned by telegraphers will then be in charge of young men or young women employed in their home town and who may be put to work after a coaching of but a few days and many of the skilled telegraphers will then be relegated to the scrap pile of "has-beens."

Does it argue for the good of the telegraphers that the telephone which may be operated by anyone is rapidly being installed; that printing telegraphers are being perfected and put into service and that the best thinkers along these lines are working much more than nine hours a day in an effort to devise some means of getting away from the aggressiveness of a class of employes who consider the interests of the railroads as secondary to their obligation to the order they represent?

The railroads under existing methods are necessarily obliged to secure their agents and train dispatchers from the telegraphers, and from such employes higher officers heretofore have been selected. If a departure from such methods in the use of other devices—which now seems more than probable—is made, will not the personnel be strengthened

by a selection more desirable, generally better qualified and more reliable and a new class of employes evolved whose individuality is not stifled by their allegiance to a false god?

Mr. Daly: I would move, Mr. President, that we take a recess of five minutes, and reassemble in Executive Session for the discussion of Mr. Chenery's paper.

This motion being duly seconded, was carried.

And the open session thereafter adjourned.

THIRD SESSION.

Thursday, June 25th, 1908.

The meeting was called to order at 2:15 P. M., the President, Mr. E. P. Griffith, being in the chair.

The President: Gentlemen, we have a big afternoon's work before us, and several important papers to be presented, so we will have to devote our entire time and attention to getting through the programme laid out.

The order of business calls for the resuming of our papers. The first paper to be presented this afternoon is a short history of the Association of Railway Telegraph Superintendents, by Mr. W. F. Williams, Seaboard Air Line Railway.

I will call upon Mr. Williams to read his paper.

Mr. William's paper is as follows:

THE ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS, ITS PAST, PRESENT AND FUTURE.

By W. F. Williams.

In assigning to me this topic for a paper, your committee has given me such a wide scope that much I would like to say must be sacrificed to brevity. They surely must have mistaken my powers, supposing me to be at once, historian,

recorder and prophet. However, it is given us all to learn the past; the present is ours; and it does not require the wisdom of a seer to read the horoscope of an organization whose watchword is "Go Forward."

Having had the honor and pleasure of membership with this delightful and profitable body but twelve of the twenty-seven years of its existence, I can speak of its early history only as I have gathered data from different sources.

In 1882, several railroad Superintendents of Telegraph happened to meet in the office of Col. R. C. Clowry in Chicago. During a discussion of matters of mutual interest, Mr. W. K. Morley, of the Chicago & Alton R. R., suggested the formation of an Association, and on November 20, 1882, a meeting was held in Chicago, at the Grand Pacific Hotel, at which Mr. Morley was elected President, William Kline, Vice-President, and C. S. Jones, Secretary. Committees were appointed to draft a constitution and a form of service card.

The second meeting was held at the same place, June 13-14, 1883, at which the roll showed forty-three members, representing thirty railroads. At this meeting, Mr. Morley was re-elected President and Mr. P. W. Drew, Secretary. How long, and how ably, and how pleasantly the latter has served in this capacity, we all know. Physicians say "A man is as old as his arteries." I have recently read with much interest, that D'Arsonval, a celebrated French experimenter, has invented an apparatus to prevent the incroachment of age. By applying a high frequency current of electricity, with vibrations as high as one hundred millions per second, the walls of the arteries are kept from hardening and the blood, finding no resistence, speeds on its round giving health and life and youth—a veritable Ponce de Leon having been discovered. I am sure I voice the sentiment of each and every member of this organization, when I suggest

that our first duty is to see that our beloved Secretary is at once made the object of this wonderful rejuvenator, and in the event one application does not bring the desired result, we give him two, so that paraphrasing a well known couplet, we may say of him:

"Men may come and men may go,
But Drew goes on forever."

The third annual meeting was held in Philadelphia, Sept. 17, 1884. The records of each succeeding meeting show that interest never flaged. This coming together proved such a well-spring of thought, that the membership increased, each one eager to profit by the mutual interchange of experience and observation. Manufacturers began to take note of these gatherings and knowing the inquisitive character of these men searching for the latest and best inventions to assist them in their work, decided that in one respect at least, they were all "From Missouri," and at the 6th meeting in Boston, June 1887, the first exhibits of telegraph and other electrical devices were introduced, and this has proved a most interesting feature. Recognizing the value of this innovation, the constitution of the Association has been so amended as to permit manufacturers or their representatives to become associate members.

Meetings have been held in various states, from Canada to Louisiana and from New York to Colorado. The one held in Wilmington, N. C., May 1899, was made memorable by the fact that we had as our guest of honor, Thomas A. Edison, the greatest inventor of the age.

The Silver Anniversary was held in Denver, June, 1906, and the last meeting, in Atlantic City, still so fresh in our minds, brings us to the present time. The projectors of this movement "builded wiser than the knew." Our latest information places the total railway mileage in the United States, January 1908, at approximately 230,000 miles of line.

The membership of this organization represents 175,000 miles or 76% of the whole. There are eleven systems, representing 11,450 miles, which have Superintendents of Telegraph, who have not identified themselves with us. The remainder, or 63,550 miles, is made up of small lines, varying from 3 to 1900 miles with no Telegraph Superintendent. These figures speak for themselves. No more eloquent tribute could be paid to the popularity and value of our Association, and no more foreful evidence of the alertness of the men having in charge the telegraph interest of the various railroads they represent and their determination to keep in the front rank and up to date in all that pertains to the betterment of the service.

The history of the Association shows steady advancement in every way. The papers presented and topics discussed, have been of wide range and practical good has been evolved in these recitals of knowledge wrought out of the experiments, tests and trials of every day life. The quality of the discussions clearly reveals wide research and diligent investigation, a determination to get at the root of things. And so today we stand with problems old and new before us. In the field of electricity developments follow in such quick succession that one point is but fairly settled when another more important and far reaching confronts us. The secular press tells us that a Frenchman has invented a little machine which will enable a man in New York to see what is going on in Paris. A Danish inventor is credited with having solved the problem of transmitting a photograph by wireless. A scientist in Portland, Oregon, has invented the "Teleone", which enables parties conversing over the telephone to see each other. None of these are more improbable than others which have been fully demonstrated and are now in daily use. One of the most vital issues before us today, is dispatching trains by telephone,

a proposition which in the early history of our meetings would have brought a smile to the lips of the most credulous. But the handwriting is on the wall, the practical working of this admirable scheme has become an accomplished fact —and facts like fire make people move. I predict that the next decade will see a marvellous revolution along this line. Would not the "Teleone" be an additional safeguard?

So the future looms before us big with possibilities, weighted with responsibilities. We must work, study, experiment and together thrash out the knotty problems as they come to us, realizing that on us rests the upbuilding of the branch of railroad service entrusted to our care. Nothing "succeeds like success", and this Association has been an unqualified success. What it has been it will be. The personnel is composed of men who are conscientious, honest and earnest—who appreciate the opportunity afforded them by these annual reunions, for absorbing the best thoughts of men who are daily meeting and mastering the complex conditions which arise in the administration of the duties which devolve upon them.

I cannot close without saying that no agency has been so helpful, no source of information so fruitful to me in my daily life, as the meetings of this Association. When to this is added the charm of its social feature, I feel that it is indeed a privilege to be "one of the boys". In the language of Rip Van Winkle, "May you live long and prosper."

The President: I wish to thank Mr. Williams personally, and on behalf of the Association for his very interesting paper. There are a good many of the younger members of this organization who, perhaps, have nothing more than a very hazy idea of its history. I am sure we are all pleased to see the history of our Association dealt with in such an able manner as Mr. Williams has dealt with it.

I am pleased to see that we have with us today the second

President of this Association, Mr. Morley, the first President, having served two terms, and, I am going to call upon Mr. Selden to say a few words to us, as one of the oldest members (not necessarily in years, but in length of service) of the Association of Railway Telegraph Superintendents.

Mr. Selden: Mr. President and Gentlemen: I hardly know what I can say to add to the very able paper just read by Mr. Williams, but, perhaps, to go a little behind what Mr. Williams has said I might tell you that Mr. Morley and I met on a train one day, and it come out in the course of the conversation that he had hired a man who had just been discharged from the Wabash, and I had just hired a man who had been discharged from the Alton Company. I was then Superintendent of the Wabash Lines for about three months. I said to Mr. Morley "don't you think it would be a good thing for us if we had an Association, or some arrangement for communication between Superintendents. He said he thought it would be a good idea, and added, "Go ahead and get it up." I said, "Just take hold of the thing, and if we persist in it, we can get just exactly what we want, eventually.

The result of our conversation was that the first meeting was called at the Pacific Hotel.

In the beginning we were not looked upon very favorably. There seemed to be an impression that we were going to start a little bit of a pleasure organization of our own, and probably swap contract secrets. Eventually it was found that that was not the case, and those who had looked with disfavor upon the Association came to believe in its utility.

I have been in other Associations, and I have visited a great many of them, but I never saw one, or never belonged to one wherein there was so much time and attention

given to the work and to the advancement of the affairs of the Association, as there has been in the American Association of Railway Telegraph Superintendents.

I can say, as I look back through a great many years of the service of the telegraph, that this Association has been to me a very great source of pride and I would much rather belong to it than to any other organization I know of.

I served this Association as President, and I thought at that time that being President of the American Association of Railway Telegraph Superintendents was almost as great an honor as being President of the United States.

I do not know of anything more I can say which would be of interest to you, except that this Association has largely tended to advance the consideration with which the Superintendents of Telegraph are now regarded by the other officials of the Railways. It is true that in the advancements which are being made the necessity has been greater than they have realized (although we were some time in getting to that stage) for such an Association—they have come to realize that there was an absolute necessity for such an organization, just as much, in fact, as there was for such an Official as a Superintendent of Telegraph. They know that the Superintendent of Telegraph, in order to maintain his position, must keep abreast of the time, and be ready at all times, to answer questions in regard to every new development in the management of the Railways, as far as the Telegraph is concerned.

I am very pleased indeed to see this meeting so largely attended, and I hope as we go along from year to year that we shall become stronger and more necessary than ever in our particular lines, and that our membership will increase steadily, until we become a power in the land.

Mr. Rhoads: Mr. President, inasmuch as we have with

us today practically the first President of our Association, we may overlook the fact that we also have with us a gentleman who even antedates the first President. We have here with us today the Chairman of the first meeting held before they organized and elected the first President.

I have much pleasure in suggesting that Mr. Kline of the Lake Shore and Michigan Southern, the First Chairman of the First Committee of this Association, should say a few words to us on this occasion.

Mr. Kline: I agree with what Mr. Selden has said entirely. As he told you we met at the Grand Pacific Hotel, and I think I was the first Chairman of the Board, as it was then.

After that, I left for several years, and did not meet them. However, I kept track of what these gentlemen were doing. This is the second time I have been to a meeting in over ten years, but I have kept in touch with everything that has been done, and I am very glad to see that the younger generation have grown up and have tried to stimulate the work of the Association. They are a brave, good looking lot of fellows, and I feel sure that they are going to make their mark in the world, just the same as the old fellows who preceded them.

I wish you, both individually and as an Association, all success in whatever you may attempt, and I will be very glad indeed to do anything I possibly can to assist you. in any way.

The President: It might be as well for me to announce at this time that this particular meeting has been very successful in every sense of the word.

In the number of new members elected, we have beaten all records. At this meeting we have taken in no less than twenty-five active members, and sixteen Associate members

—more than three times the number that met in the Grand Pacific Hotel in 1882. This shows that a great oak has grown from the tiny acorn planted in the Grand Pacific twenty-seven years ago.

The next item on our programme is the reading of a paper by Mr. C. S. Rhodes, entitled "Qualifying Operators for Train Dispatching".

This is a most interesting subject, and, one which I am sure will be thoroughly and ably dealt with by my friend, Mr. Rhoads.

Mr. Rhoads paper is as follows:

QUALIFYING OPERATORS FOR TRAIN DISPATCHING.

By C. S. Rhoads.

When we come to consider that about 90 per cent. of young men make failures of their chosen vocations it is easy to see that only the fact of the individual being the sole sufferer thereby is all that prevents the above mentioned startling condition from causing serious disorder in our complex business fabric. Relatively few of this 90 per cent. are Train Dispatchers, but just for a moment consider what a failure means in their profession, any one of numberless oversights or careless risks and mistakes may distribute the suffering to dozens and even hundreds of people who may never even know the name of the man whose failure at this chosen profession has involved them.

If qualifying an operator for this important position consisted merely in having him become conversant with the Standard Code, our task would be an easy one, but the work of the Train Dispatcher is such that to be successful, in the true sense of the word, he must be an extremely resourceful individual, with many and varied attributes that go to make safe service. Some one has said that "Wisdom is

knowing what to do next" and "skill is knowing how to do it." So our first duty in looking for material is to find the fellow who at least has the first of these attributes, that is, one who is not satisfied with what he is doing as an operator only, but has ambition to become a Train Dispatcher, and is wise enough to take advantage of every item that fits him for his calling.

Our next duty consists of aiding him to become skillful. He should be able to send good Morse and to receive good bad and indifferent, and to be put up to date, hereafter, must cultivate a telephone voice, as the Dispatcher of the future will no doubt 'phone his orders, hence, clear pronunciation, minus stammering will be a necessary requisite. He should first have good experience at a way station, becoming familiar with all the little details of station work, including not only the agent and operator's portion, but that of the train men, then when he has earned his promotion to the Dispatcher's office he will have a knowledge of things thus gained which gives him an advantage over the man who has not had the benefit of the station training, the more training he has in this direction the sooner he should be qualified for Dispatcher after entering the Dispatcher's office, and the time of probation there, in addition to his natural ability for the work, consists largely of the opportunity he has to observe and familiarize himself with the Dispatcher's work, preferable he should act as copier for a Dispatcher, in that capacity he not only has the better chance to become qualified but the Dispatcher has an opportunity to try him out, and if himself, properly qualified as a teacher, is soon able to pass judgment as to the applicant's adaptability and fitness for promotion.

Yet, with the advent of the short working hours for operators, one can find time to put in some spare hours each day, if he is a wise aspirant, for a larger usefulness, in

keeping up train sheet for the Dispatcher, and in going out on the road becoming thoroughly familiar with the trials and tribulations of the train men and in knowing the location of every switch and siding, in fact nowhere is a complete knowledge of every detail so important an element as applied to this service. When we come to try to enumerate the items that constitute all the elements that stand for success in train dispatching, we are apt to frighten possible candidates by the apparent multiplicity of duties required to meet the demands of the position. But it is just this underlying fact that every applicant should understand in the beginning, and our duty is to see that they have that idea thoroughly instilled into them, and that "a little knowledge is a dangerous thing", in connection with Dispatcher's work; and in examining operators for promotion a full and complete knowledge of every factor of safety, including what might be termed only precautionary items, should be required. While some may argue that a person is not at his best until after he has made a few mistakes, we must urge that Dispatcher's work be the exception, if that is to be the rule, and certainly no operator should be approved for promotion whose record does not imply that in all cases of doubt or uncertainty he will take the safe course and run no risks.

The President: Mr. Rhoads' paper is now open for discussion.

Mr. Rhoads: Before the discussion begins I would like to enquire how many gentlemen there are here who have been train dispatchers, or who are dispatchers at the present time?

(About fifteen of the members present indicate that they have been trains dispatchers, or are at present engaged as such).

Mr. Rhoads: I would like to know also how many of you gentlemen present, have, as a portion of your numerous duties, the work of examining the operators on the rules for train dispatchers?

(Three of the members present indicate that they have the duty of examining operators on the rules for train dispatchers).

Mr. Selden: Mr. Rhoads has just asked if there was any one present whose duty it was to examine operators for dispatching. I would like to know if there is any one present who has, as part of his duty, to examine the dispatchers?

Mr. Rhoads: That was partly included in my question.

Mr. Selden: It is the custom, two or three times during the year on each division of our road, to select, at random, the books of the dispatchers, and see wherein he has violated the rules. All the work of every man who works a trick is gone over for that purpose, and a report is made to the General Manager, and also to the Superintendent of the Division.

Mr. Rhoads: I might just add a word in reference to our work in that direction. For a great many years the Superintendent of Telegraph (owing to his having numerous duties, and possibly on account of his eminent qualifications) has been detailed to have charge of the examination of dispatchers, and operators for promotion to dispatchers, in order to see that the rules were understood alike on all divisions.

In doing that the idea is to have the Superintendent and the Train Master and the Chief Dispatcher present, if possible. However, within the past two years, owing to Legislation, largely in one or two of the States, they thought best to pay more attention to examining the operators who

were on the block system. In order to do this they made a selection of an experienced telegraph man, Mr. E. R. Bonnell, (who was elected a member of our Association yesterday), giving him the title of Supervisor of Train Dispatching and Block Signals. One of his duties, in connection with the examination of operators, would be that of handling the Block signalling work, and following up the dispatcher's work, both in their offices, and out on the division. From time to time he goes into the offices and finds out if the forms of the orders, and all the details of the work are being complied with.

We found that his work has been followed by excellent results, and the dispatchers are now kept on the lookout, because they know there is a man who is looking after them, and who will want to know why they are doing anything which is not strictly in accordance with the rule. For instance, if they want to annul an order, and call out "Bust such an order," they are liable to get a letter from the Superintendent enquiring why they have done so.

The Supervisor reports to the Division Superintendents in regard to things which happen on their divisions, and may, in certain cases, send a copy of his letter to the General Superintendent.

Mr. Camp: On the Canadian Pacific we have officers known as "Inspectors of Train Dispatching." Our line is divided into two grand subdivisions, under the names of Eastern Lines and Western Lines. We have present with us today the two Inspectors who look after those divisions—Mr. Hatton and Mr. Rooke.

I would ask Mr. Hatton to give the members present the benefit of his experience.

Mr. Hatton: On the Western lines of the C. P. R. the Dispatchers are generally selected by the Superintendent,

or by the Chief Dispatcher. In selecting these Dispatchers they generally take into consideration a man's ability as an operator, and they also estimate as far as they can, what his judgment is concerning train movement, etc. His past record is also taken into consideration.

These men are examined by the Chief Dispatcher and the Inspector of Transportation on the Western Lines. I have the honor of filling that latter position myself.

It is the duty of Inspector of Transportation to visit the several Dispatching Offices as frequently as possible, probably about once a month, and to see that a uniform system of dispatching is maintained, and that the Standard rules are observed. Any mistakes that he finds in the office are taken up direct with the Train Dispatchers, and the Inspector also reports direct to the General Manager, who takes the matter up with the General Superintendent.

Of course, we always point out to the Train Dispatcher on the spot, anything which we find wrong, and he rectifies it at the time.

We have special rules in addition to the Standard rules, which we expect to be lived up to; and, where we find that they do not observe those special rules, we take it up with them, and they have to account for themselves.

Mr. Rooke: I do not know that I can add anything to what has already been said, that in the matter of choosing Train Dispatchers, on the Eastern Lines we follow the practice of having certain offices where our best operators work; that is at divisional points and terminal points, where the bulk of the work centres on them. In that way they are peculiarly fitted for the position of Train Dispatchers when their turn comes.

In connection with what has been said about a copier, I would like to ask what is the practice on the different

roads? The copier writes the orders out as the Dispatcher sends them. In a repetition is the copier responsible or is the Dispatcher responsible?

Mr. Selden: On the B. and O. the Dispatcher is responsible. He sends the order and is responsible for it.

Mr. Rhoads: After changing the adminstration of our road, the General Manager (who had not been a Train Dispatcher) voted that the copier was an unnecessary luxury, and that it would be best, in holding the Dispatchers responsible, to have them copy their own orders. Possibly five years ago the last of the copiers were done away with.

I grew out of a Dispatcher's office myself, as a copier, and I always rather fancy (perhaps owing to that fact) that it gives an operator in the Dispatcher's office a chance to demonstrate his ability, and the Dispatcher in the office a much better chance to find out whether he is a proper man or not.

As it is now and as it has been those past few years, sometimes you have an operator go into the Dispatcher's office, and he sits at a table during his alloted time, and he may stay there for a year or more, and never hear a train order sent. He really has no chance to fit himself, unless he comes around after hours to do so. He is no better off than he was out on the road.

Mr. Ryder: There has not been a copier on the Burlington as far as I can remember. For my own satisfaction I would like to know how general the work of having copying operators obtains. With the permission of our worthy President, I would like the members present to tell me how many roads there are where copying operators are employed.

(Three of the members present indicate that copying operators are employed on their roads).

Mr. Selden: I may say that on our line we tried the copiers a couple of years ago in a very busy office; but the trial only lasted two days. We did not like it, and rather than have the copiers, we placed two or three men in the Dispatcher's office to assist them in making out reports, etc., but there was not enough to be done, and we dropped the idea of copying.

I may say, also, in connection with selecting operators for Dispatchers, that we usually place them in the Dispatcher's office where they can get more thoroughly accustomed to the work. When we cannot place them in the Dispatcher's office, we put them in terminal offices.

Mr. Jackson: I would like to ask what you consider a fair day's work for a Dispatcher who has no copier, and whether you take the sheets off his hands, or whether he has to copy his own orders, and look after them part of the day, and perhaps part of the night?

What I want to know is about how many orders in the usual course, would you consider a fair day's work for a man working without a copier?

Mr. Rhoads: It is very hard to answer that question. We have had Dispatchers where there were two hundred orders given in the twenty-four hours. Of course, that would be an eight hour trick. Some portions of the day it would be a little livelier than others. I could not state just what the maximum or minimum would be.

However, a Dispatcher is figuring on what he is going to do, and sometimes has several different things in mind at one time. When he is sending an order, of course, he sends it out of his head, and as the first operator repeats it, he copies the order, whereas, if you have a copier, he puts the order down, which gives the Dispatcher a little more time to figure on other more important work.

Having grown up with that way of handling orders in the Dispatcher's office, and having watched it since, without a copier, I still feel at times as though it would be a good arrangement to have the copier back. Our road has never considered it favorably so far.

Mr. Van Etten: I have worked on roads with copiers and we finally came to such a state that we did not consider it necessary to have them. The copier was not in the habit of working as a Dispatcher, but he kept watch on the Dispatcher.

Mr. McFarlane: We have one district where the dispatching is very heavy. We have Dispatchers who handle from eighty to one hundred and twenty orders on a single trick. We have Chief Dispatchers both night and day in those offices. Those trick Dispatchers, however, look after the ordinary movement of trains, but a general outline for the work is taken up and arranged for by the Chief Dispatcher.

We have no copiers on any portion of the road..

Mr. Camp: It seems to me, Mr. President, that if we are going to adopt the telephone dispatching altogether, the question will resolve itself into one of no copiers. The Dispatcher will naturally drop into writing his order as he transmits it.

Secretary Drew: I notice that the paper written by Mr. Jacoby, entitled "Depot Wiring from the Contractor's Standpoint" is in the hands of the Chairman of the Topics Committee, Mr. Davis. The Chairman of the Topics Committee is, however, unfortunately detained by an important business matter which suddenly arose. He told me just before the meeting opened, that he could not be here for an hour or so. I think under the circumstances that we had better suspend the reading of Mr. Jacoby's paper until Mr. Davis is present.

Mr. Foley's paper on "Moving Trains by Visible Signals" is not yet completed, but he has arranged with the Chairman of the Topics Committee to send me the paper in time to be printed in the Minutes. I do not suppose there will be any objection to that.

Mr. William Maver's paper on "Developments in Wireless Telegraphy" will be read tomorrow, when Mr. Maver will be here.

This leaves nothing in the way of papers before us now. It would be perfectly right and proper if we were to proceed with selecting the next place of meeting, and the election of officers.

The President: Inasmuch as we have a very good attendance of active members just now, it seems to me that this would be a good time to do as our Secretary suggests.

If there is no objection we will proceed with the selection of the place for our next annual meeting.

The Secretary has some invitations which he will read to you, but of course, you understand it does not necessarily follow that we must select a place simply because we have an invitation from it.

I may say that I think in reaching your conclusion you should bear in mind the fact that a central point is most desirable. You all know that many of us can ill afford to spend more than two and one half or three days in reaching the point of meeting and returning. I believe that we would have a better attendance if we selected a central point, and I hope that you gentleman will decide on a place which will be in the best interests of the Association, irrespective of invitations or inducements from other places.

Mr. Selden: I quite agree with what you have said, Mr. Chairman. I also think that it is not necessary to take into consideration the districts of the Officials, whoever you may

select. It seems to me that we should endeavor to meet in a central point.

Now, there are a number of places which will probably be suggested, but I would suggest one, which I think would be very satisfactory to everybody.

I, therefore, move that the next meeting of this Association be held in the City of Detroit, Michigan.

Mr. Dyer: I have been requested by the Chamber of Commerce, the Association of Merchants, the Mayor of Los Angeles, and several prominent individuals and members of Organizations to extend to this Convention a hearty invitation to hold its next Annual Session in the City of Los Angeles, California.

I do not desire to urge the matter if it will interfere in any way with the attendance at the meeting. However, I would like to call your attention to the fact that, so far, this Association has not seen fit to hold a meeting west of Denver, Colorado. Many of the members have not had an opportunity of seeing how we carry on our business in the West—they have not seen the country, and do not know our telegraph system—nor have they had an opportunity of visiting the most beautiful part of North America.

Aside from its many attractions as a pleasure place, the members of this Association and their ladies, will have an opportunity, not only of visiting Los Angeles, but also of visiting Pasadena, San Bernardino, San Gabriel, and seven or eight other places famous the world over.

Many of the members of this Association must, for business reasons or other reasons, make the attendance at the annual Convention also their annual outing; therefore, it seems to me that the City of Los Angeles should be considered.

We have there, one hundred first-class hotels which will take care of a lot of members, and, if there are too many for those hotels we have a great number at Pasadena and other places.

You will have an opportunity of visiting the orange groves, and the ostrich farms—you will have an opportunity of seeing Jim Jeffries, and one or two other luxuries.

Many of the members, no doubt, have visited Southern California, and know that it is a most beautiful country. The sight of our tropical plants, orange groves, and so forth would be very interesting indeed to those of you who have never seen anything of that kind.

Owing to the fact that this Association has never gone west of Denver, I think it ought to be an additional reason for you to consider Los Angeles favorably this time.

The Mayor of the City, and those different Associations and Organizations cordially extend an invitation to you to visit them; and, I assure you personally that you will all have a good time.

There are different places where we can hold our meetings. In fact, it could be arranged that we would move from day to day, and hold the different Sessions at different places.

As a matter of information, I might say that during the month of May we have in the City of Los Angeles, we have what is called the Annual Festa, which is a most gorgeous affair. It is a flower parade, one of the remnants of the old Spanish period.

As an additional attraction we will also have the Exposition at Seattle, which will be open.

The time between Chicago and Los Angeles is four days. Between St. Louis and Los Angeles is four days. Between

El Paso and Los Angeles is three days. Los Angeles may be reached either by the Northern Routes or Southern Routes, and those who may desire to visit Portland can do so either from the South or from the North.

The fact that it is a long way to Los Angeles should not act as a reason against your going there now, because I think it would be an education in itself for many of the members to go.

We have an invitation from the best Organizations and people of the City, and, as I say, you will have a good time and will be able to take care of your business at the same time.

The President: I notice that a few of our members have came in since this question came up. For their information I would say that we are now discussing the place of our next meeting. So far there have been two suggestions, Detroit and Los Angeles.

Mr. Dyer: I would move that Los Angeles be selected as the place for our next meeting.

Secretary Drew: As I read you this morning, we have an invitation from Goderich, Ontario.

We also have the usual standing invitation from the Organizations, Business Men's League, etc., of Niagara Falls.

Our friends in Atlantic City have sent us an invitation to go back there again next year.

Mr. Rhoads: Mr. Chairman, a central point mentioned as being probably the best place for us to meet is in accordance with my ideas.

While I fail to bear any invitation from any of our Commercial bodies, I would like to mention Indianapolis as a

place where the latch string is always out. They claim there that they have more Conventions than any City in our land.

Since this Association met there a few years ago we have added to our Park lines, and we hope that when you come again you will take time to go through the parks. We also have Fort Benjamin Harrison, a new Government Army Post, which has been made into a very beautiful place, and if you come to Indianapolis, I can safely guarantee to give you a good time.

Mr. Davis: I did not hear the first part of Mr. Dyer's remarks, and I was just wondering if he omitted to say something which he certainly should have said, and that is in connection with the temperature.

He told me that the weather there is very delightful about this season of the year, and that the people slept, last Tuesday night, under the same covering as they did in January. That is very comfortable and delightful, and I, for one, hope that we will decide to go to Los Angeles this year.

The President: If there are no other suggestions I think it would be as well for us to put the matter to a vote. This is a matter in which only active members have the right to vote.

Those in favor of Los Angeles will please rise so that we can count them.

(The vote resulted in fifteen members voting in favor of Los Angeles, and twenty-four against).

The President: I regret that we cannot take advantage of the beautiful climate of Los Angeles. I have been there myself, and know exactly what we are missing. However, I do think that it is a trifle too far away for a successful meeting. Personally I would have been very pleased to go to Los Angeles.

We will now vote for Detroit, as the place of our next annual meeting.

(Detroit was then unanimously decided upon as the place for the next annual meeting).

Mr. Camp: I think I am speaking for the Association generally when I say that we would have been very glad to go to Los Angeles if it were not for the distance.

The President: Now that we have decided the place of our next annual meeting, the next order of business is the election of officers. The first officer to be elected for the coming year is the President.

Mr. Van Etten: Mr. President, I have much pleasure in moving that Mr. W. J. Camp be elected President of this Association for the ensuing year.

This motion was duly seconded by Mr. C. S. Rhoads, and carried unanimously, amid applause, the Secretary being instructed to cast one ballot for Mr. Camp as President of the Association.

Mr. Camp: I do not think you have made a very good selection, gentlemen. There are several members here who would fill this position much better than I can, in fact, I had in mind one or two gentlemen whom I thought should have been elected to this high office.

Mr. Griffith: I don't think we have made any mistake—in fact, I am sure we have not.

We will now proceed with the election of a Vice-President.

Mr. Selden: I wish to present for the consideration of the Convention the name of a gentleman who I believe will strengthen and help our position. He is connected with one of the largest Railroads in the United States, and is a bright, intelligent, nice, good fellow. I have much pleasure

in nominating Mr. J. B. Fisher, of the Pennsylvania Road, as Vice-President of this Association for the coming year.

Mr. Taylor: I have much pleasure in seconding the nomination of Mr. Fisher.

Mr. Rhoads: I would like to nominate Mr. G. W. Dailey of the Chicago and North Western.

Mr. Williams: I second Mr. Dailey's nomination.

The President: Seeing that we are to have an election for Vice-President, I will appoint the "Long" and the "Short" of it as Scrutineers, Messrs. Ryder and Foley.

(The result of the balloting was, Mr. G. W. Dailey received 31 votes, Mr. J. B. Fisher receiving 14).

Mr. Selden: I move that the nomination be made unanimous, and that the Secretary be authorized to cast one ballot electing Mr. G. W. Dailey as Vice-President of this Association.

The motion was duly seconded by Mr. C. S. Rhoads, and carried, the Secretary then cast a ballot in favor of Mr. G. W. Dailey, as Vice-President of the Association.

The President: We have had the long and the short of it as scrutineers. I am now going to ask the "Wide" of it to escort our newly elected President to the Chair. Will Mr. Dyer kindly perform?

Mr. Dyer thereupon escorted President-elect Camp to the Chair amid prolonged applause.

Mr. Dyer: Gentlemen of the Association, I have much pleasure in introducing to you the new President of this Association. I guess most of you know him pretty well, so he does not need much of an introduction. I am also under the impression that he knows most of you fellows pretty well too.

President Camp: Gentlemen, I hardly know what to say on being placed in this position. You rather take me by surprise, and put me in the condition of being practically speechless.

I thank you very heartily for the honor you have done me in electing me President of this Association. I know you could have made a much better choice, but seeing that you have now done the damage, I can only say that I shall endeavor to fulfill whatever duties may devolve upon me to the best of my ability, and that I shall be prepared at all times to render whatever assistance I can to the Association of Railway Telegraph Superintendents.

As we have considerable work to do, I am not going to detain you with any speech making. You all know my ability in that line is very limited.

As President, I now say that we will proceed to business.

Mr. Selden: If it is in order, I would like to vary a little from our usual procedure in the election of another officer, and I would move that the Secretary be authorized to cast a ballot for the election of Mr. P. W. Drew as Secretary of the Association for the coming year.

This motion was duly seconded by Mr. Chenery.

President Camp: It has been moved and seconded that our Secretary be authorized to cast a ballot for the re-election of Mr. P. W. Drew, as Secretary-Treasurer for the coming year. What is your pleasure in regard to that motion?

(The motion is carried unanimously, amid applause, and Mr. P. W. Drew is declared elected Secretary for the year 1909).

Mr. Drew: I thank you very much gentlemen for this mark of continued confidence in me.

The position of Secretary, as you all know, is one that requires a good deal of patience, and as I have advanced in years, I have learned to become more and more patient.

There is one thing that stands in the way of getting our Minutes out more promptly, and that is the fact that we can never print them unless we get sufficient advertisements to pay for them.

Now, the advertisers are sometimes slow in responding to our solicitations for adds. I have been circulating among our friends, and have secured quite a few so far, so that I do not anticipate a great deal of delay on that score.

As you all know we do not have sufficient money to print our minutes and pay for them without advertising. That is what we have to work for, and the more advertising we need the greater the work to get it. We will endeavor to get our books out just as soon as we get the advertisements ready. There is another point upon which I would like to touch, very delicately, and that is that there are some members of this Association who are a trifle slow in paying their dues—so much so, that even after soliciting them two or three times, sometimes we do not get the returns from them. Although the by-laws say that if a man does not pay his dues within a specified time he is liable to be struck from the roll of membership. We never like to do that, however, because it has been our experience that members who have been delinquent for two or three years, come right around sometimes and pay up everything they owe.

It is a great honor to me to be Secretary of an Association of this kind, even with all the work, and all the worry and all the trials and all the tribulations attached to it.

I am very glad indeed to act as your Secretary, and I thank you most heartily for having re-elected me this year.

Mr. Selden: I recollect sometime ago that there was an

agreement that each member should have a copy of the proceedings, or may be two copies. After that there was a price put upon the extra copies that might be called for. Will you kindly inform me what we are entitled to in the way of copies of the minutes, and what is the price for extra copies.

The Secretary: There are two copies of the Minutes mailed to each member of the Association, both Active and Associate. The advertisers get six copies each. Extra copies of the books are sold at a price varying according to the size of the book and its cost.

We have sold a good many books for twenty-five cents each, but these books cost us nearly one dollar each. Of course, we have not asked that, because we know we would not get it. The price of the extra books would be between twenty-five cents and thirty-five cents, depending upon the size of the book.

This year, I may say, that our Minutes will fill a book pretty nearly as large as last year. Under those circumstances, extra copies would be sold for thirty-five cents.

The President: Gentlemen, I have an announcement to make, which I feel sure will please some of you.

I stated, when I presented my report as Chairman of the Committee on Arrangements, that on account of it being against the rules of the C. P. R. to issue passes for sleeping car accommodation, you would have to pay your own sleeping car accommodation from here to Quebec and return.

I have just been advised by Mr. Kent that he has arranged that there will be no charge for the sleepers on the trip.

The President: We have a paper on our list entitled "Depot Wiring from the Contractor's Standpoint", by Mr. J. H. Jacoby, Electrical Engineer and Contractor,

South Bethlehem, Pa. Mr. Davis has the paper in his possession, and will read it.

Mr. Davis: As Chairman of the Topics Committee, I asked Mr. Jacoby to prepare a paper on this subject. He has been very busy, I understand, and has not been able to be present. He has forwarded the paper to me with a letter of explanation in which he says:

"I have been exceedingly busy, which led me to postpone the matter of taking up paper on topic assigned to me, but I have finished it and forwarded it direct to place of meeting, in care of Mr. Drew, thinking that he would be most likely to be on hand.

"I do not know whether this paper will meet your idea of the subject matter, but I have endeavored to do the best under the circumstances. I trust it may prove of some benefit to the meeting, and that you may have a very successful convention.

"I regret my inability to be with you; nothing would afford me more pleasure than to meet the many friends, and take advantage of the very interesting discussions, as they no doubt will prove, from the list of subjects and papers which has been sent me."

With best regards, I am,

Yours truly,
J. H. JACOBY.

Mr. Davis then read Mr. Jacoby's paper, as follows:

DEPOT WIRING FROM THE CONTRACTORS' STANDPOINT.

The electrical contractor may have views differing somewhat from those of others who have in charge the erection of a depot or other building; it would appear but natural that he should be inclined to recommend all the various up-

to-date appliances and a liberal distribution of them throughout the building as well as ample provision for maximum amount of lighting. Whereas the builder, generally being of an economical trend, especially in the matter of electrical equipment, would not be so liberally disposed. It shall be my aim to give some good reasons for the contractors' position in this matter, and to show that a saving in first cost of a plant may prove much more expensive in the end, as well as in the matter of running expenses or fixed charges. However, I am afraid in the limited time I feel myself confined to by reeason of the numerous papers to be read before this Convention, it will be somewhat difficult to do justice to the subject.

I do not know that I have fully caught the intent of the Topic Committee as to what particular phase of the subject they had in mind when they assigned it, but have concluded that inasmuch as the the Rules and Regulations of the National Board of Fire Underwriters have been within the reach of all, and you no doubt are conversant with them, that the engineering feature might be the more profitable. However, it may not be amiss to refer incidentally to some phases at least of these rules and note as we pass along, the great strides the electrical profession has taken with reference to wiring, during the several years past.

That the contractor should be an engineer as well, I think goes without saying, although it will be noted that in most cases he simply has to follow the plans and specifications handed him; however, suggestions or recommendations for improvement from him are frequently taken in the proper spirit and add much to the electrical profession, if intelligently made.

In wiring a depot, I presume, all will agree that the first and foremost consideration is that of safety. Yet with all

the frightful disregard of the simplest electrical law, noted in the wiring of many buildings it must be said that very few fires have resulted from this source, and I would here remark that if the most ordinary precautions are taken and the rules fairly well complied with, there is hardly a possibility of fire, and from a number of years of experience in this particular field I am persuaded that electricity is the safest illuminant known.

The Underwriters' Rules, already referred to, differ somewhat in the various districts, in some of the details, but generally they are a unit on essentials and it may be said that these rules having been compiled from all the varied experiences and mishaps of the past, are as near perfection as any body of men specializing along certain lines, can make them.

One of the differences it might be well to note at this point, is the adoption of certain insulated wire for concealed work. Some Districts require rubber covering, others fire and weather proof. My preference would be the latter for the reason that the insulation is more durable. After a few years the rubber covering becomes in a manner soft and flimsy, while insulation of the fire and weather proof wire hardens and becomes more tenacious with age. In rewiring buildings this fact has been particularly noted by the writer as well as by others who confirm the statement. Yet it cannot be said that there is any particular element of danger in the use of rubber covered wire, for were it not for the fact that through some misplacement of a wire by a wireman touching some metal or other substance thereby forming an arc, the bare copper wire might be strung concealed throughout a building with perfect safety—the porcelain insulators affording all the necessary protection.

The safest system, without doubt, is the iron conduit,

either flexible or rigid, with probably a slight advantage in the latter, from the fact that it is almost impossible for any workman in locating steam or water pipes, or any other changes or alterations made after wiring, to injure the wires secured within, besides in case of any future trouble the defective conductor may be withdrawn and a new one inserted at short notice without any inconvenience and at very slight cost. However, it is contended that no potentials higher than 250 volts should be carried concealed into a building; until recently the popular 500 volt D. C. for motor service was permitted, when each of the two wires of the circuit was placed in a separate pipe and when wires were lead encased; but this was found to be bad practice leading to various troubles and dangerous to property. The placing of both wires in one pipe and securely grounding all the pipes throughout the building is considered much better, but even this is not recommended. I should say that if it is found absolutely necessary to take them in concealed, secure a high grade insulated, Duplex, lead incased, and place in iron conduit, grounding the latter securely.

It might be of interest to note here that an attempt at securing this result was made some few years ago, in the use of what was then termed, paper conduit, which was constructed of a paper fibre coated inside and out with a pitch or tar preparation, answering the purpose of withdrawing the old and inserting new wire, very well as long as no nails were driven into it, but with this feature thrown in, the wire could only not be pulled out, but an electric arc developed, setting fire to the building. This has actually occured and it was not long in use before it was placed under the ban by the Board of Fire Underwriters. Several cases of this kind came within my personal experience. When this paper conduit was first placed on the market, two large depots in cities along the line of the road, were

under construction, and a gang of men were placed in my charge for piping and wiring them. This conduit was placed with great care and precision and all the wires afterwards pulled in. It was pronounced an up-to-date job and all went well for the space of twelve years or more, when suddenly through some alternations made by a carpenter on one of the floors of one of the stations, a short circuit developed and a fire started. Luckily it was discovered and put out before much damage was done. The other so far as I know is still intact and working all right.

The twin conductor, flexible steel armored wire, while approved and doubtless safe, has the unfavorable feature of difficulty in removing, should a short circuit or ground develop—such trouble is quite possible, in fact has several times occurred recently, to the writer's knowledge.

Ordinarily, what is known as knob and tube work whereby the wires are secured along timbers by means of porcelain knobs and through timbers by porcelain tubes or bushings a safe distance apart so that no wire of opposite polarity can possibly get together, may be regarded as entirely safe so long as no grounds or crosses are produced by workmen on the building afterwards; the wires being entirely concealed there is no means for locating them when holes are drilled for gas, water or other pipes, besides in the average depot building there are numerous outlets in or near brick walls where it is not considered proper to use other than iron or steel armored protection, so that it would appear far preferable to have a complete and uniform conduit job.

It all classes of wiring, whether concealed or open, (and I would not draw the line on electric light work, but include wiring of every sort), the joints should be carefully soldered before taping. This is very important and cannot be too strongly emphasized.

The second consideration doubtless is the lighting effect, and this means plenty of light with proper distribution and location of outlets. Here the architect figures largely if not entirely, and it is suggested that he consult the contracting engineer, which is sometimes done, in order to reach the best results. For beauty and attractiveness the lighting effect can scarcely be ignored. A depot may be decorated and furnished in the most lavish manner, yet if improperly lighted will lose much of its lustre and beatuy and the saving thus effected prove a false economy. Lighting outlets with proper fixtures should be carefully located with due regard for height of ceiling and area to be covered, as well as the room furnishings. Every avenue, passageway, corner and nook should receive its proportion of light, eliminating all dark and gloomy spots.

The economical side of depot wiring is frequently placed first on the list by reason of the fact that appropriations are lacking and in scalding down, the electrical equipment is the first to suffer. Switches or other controlling devices are omitted and an insufficient number of circuits provided. All of which will tend to increase the running expense. Be liberal with your switches or controlling devices, divide up the circuits into such combinations as will meet the lighting requirements for different hours of the night, being careful to locate such switches conveniently so that the attendants can readily operate them and there will be a marked saving in current bills, and in case of an isolated plant, in fuel and renewals, paying a large percentage on the additional investment. The rule should be to make it just as easy as possible to control lights and combinations of lights throughout the building.

I have only treated briefly the question of electric light wiring, the other wiring, such as telephone, telegraph, fire alarm and power circuits, should also be carefully planned,

providing shafts, ducts and passageways for all such wires, so that at any time in the future, changes can be made without defacing the building or displaying unsightly cables and wires. This in former years was sorely neglected, but of late more attention has been paid to the matter with highly beneficial results. In entering a depot plans should be made for underground service. In making this recommendation I am aware of the fact that there are a number who oppose this, preferring overhead work, but it has been satisfactorily demonstrated that underground construction can be made perfectly secure and reliable, and while, perhaps, somewhat more expensive at first cost, will undoubtedly prove a saving in the end, and then it is so much neater.

In presenting this brief paper I have not attempted anything new, but it is hoped that some of the suggetions may lead to a profitable discussion by the members of the Association.

Respectfully,

J. H. JACOBY.

Mr. Selden: In connection with this paper I would like to say that about a year and a half ago, the B. and O., through their architect's department, determined that all new stations, whether large or small, should be provided with two underground conduits, one for electric light, and one for telegraph and telephone service, and that all reconstructions of old buildings amounting to anything worth speaking of should be similarly equipped.

It might be well for the members of this Association to bear that in mind. It is something which does not cost very much. The conduit may be made either of iron pipe, or terra cotta. We have had a number of stations wired in that way, and the result has been very satisfactory.

You know what it is to put in a nice little station, if

you do not afford facilities of this kind the electric light people will come along and string their wires anywhere. They will stick porcelain insulators under the eaves of the building and get their wires in any old way. There is nothing that so disfigures a building as an unsightly lot of wires running into it.

Mr. Chenery: Do I understand that that idea prevails anywhere except on the B. and O?

The President: I think we have been more or less neglectful in the past, in regard to the manner in which we enter our stations, and other buildings with our wires.

The C. P. R. Company is a confirmed offender, in this respect. Of late years, however, we have used throughout our whole system aerial cables for this purpose. The great trouble we find is in going underground into a nice new station, or putting in a neat aerial cable, the telephone company or the electric light company, will come along and stick up their wires anywhere, absolutely destroying the effect of any attempt at neatness which you have made.

Mr. Taylor: I would like to ask Mr. Selden what kind of cable he uses in the underground work. Is it lead covered cable?

Mr. Selden: Lead covered cable, and where the Railway Company furnishes it, we have wires twisted and laid out in pairs.

Mr. Taylor: Do you notice any more trouble than usual in these cables?

Mr. Selden: We do not. They are generally well insulated.

Mr. Taylor: Do you protect them with lightning arresters?

Mr. Selden: On the whole, yes.

The President: Here in Montreal the Canadian Pacific Railway Company has an underground system from the Windsor Station to our Commercial Telegraph Office. We have not had any great difficulty from lightning, or in fact anything else, since we installed that system, which is about six years ago now. All wires, in our belief, should be underground.

We protect our wires outside with lightning arrestors on the poles.

Mr. Chenery: I would like to ask Mr. Selden how he gets into his buildings with electric light wiring, if the wiring is not in accordance with the specifications of the Electric Light Companies of the smaller towns.

Mr. Selden: I have not a copy of our specification. That is handled entirely by the Architect's Department. We have a regularly organized Architect's Department, and all those matters are provided for and taken care of. We do not have any trouble whatever.

I really think it is a deplorable thing to ride along a railroad and find a nice new station all plastered over with black unsightly wires.

We take a great deal of trouble to get our wires across the tracks in a neat way, but we do not seem to bother about our station. How many of us have seen nice new stations erected, and, have come back three or four months afterwards and found the appearance of the station absolutely destroyed by those wires, which have been allowed to straggle in, in any old way.

The cost of putting down a small amount of this concrete does not amount to anything, comparatively speaking, and it leaves the station clear and neat, and allows it to show up well, instead of having a lot of ugly, straggling wires.

Mr. Church: Do you think it necessary in the use of short aerial cables, say from 40 feet up to 200 feet in length, that there should be a protector of some kind, or lightning arresters of some kind.

Mr. Selden: Well, in many instances where we have a short run of cable we have one protector out on the pole, to protect it. We do this to protect the building, rather than to protect the wires.

In some cases where we have a great number of wires, and especially where we have a long circuit, we generally have those protectors or lightning arresters on the pole. Ordinarily the connection is inside.

Mr. Van Aken: Are we to understand that there are fuses on the office pole as well as lightning arresters?

Mr. Selden: We use fuse on the office pole where we have a large number of wires, and where we can arrange the pole conveniently for them.

Ordinarily, I may say, we use the fuses in the office. I have gone into the matter pretty carefully, and I do not know of any office where we have lost anything by lightning. Once in a while, I suppose, we meet with accidents, but they do not generally amount to much.

For the benefit of the Association I may say that within the last few years the plans for every depot or station on the B. & O. are submitted to the Superintendent of Telegraphs for his approval on the wiring situation. The Superintendent of Telegraphs has to approve of the provisions made for the wiring of a station before the work proceeds.

We are just about finishing a fine terminal at Wheeling, with a cement viaduct probably a thousand feet long. In making that bridge they made the conduits right in it, both for the lighting and for the telegraph.

The B. & O. building at Baltimore (of course that is a building which we were constructing with a view to providing for the future) is provided with a system of wiring which is so arranged that you cannot put a desk anywhere on the floor but what would connect with wires immediately underneath it. We can connect a desk in any part of that building with the wires underneath, without taking up the carpets, linoleum or anything else.

This is worked on a rather peculiar system perhaps. It was an experiment, you might say, in the beginning. The theory was that we would make a lot of outlet boxes about eight feet apart, and string the wires across between them. There was hardly a space of five feet between two sets of wires.

We arranged the circuit channels on each floor transversely every ten feet or so, and then crossing them, we had lateral channels at slightly wider distances. The result of this is that you can put a desk anywhere on the floor and by going down under it, you will strike it within the area of the desk. I may say that we even went so far as to have our desks made with hollow legs so that the wires could come up through them without being seen.

We have in that building one hundred and forty desks, and we can move them about anywhere we like without taking up a carpet.

The way that is worked is this: There is an outlet on the base-board, and then there is another on the picture rail. These are coupled together by a cable about three-quarters of an inch in diameter. When we want to make a connection for a telegraph or telephone, we take the diaphragm of an ordinary telephone, and taking another telephone connect it with the circuit. The man who is making the connection holds one of these diaphragms to his ear and goes

along on the floor. The moment he comes near the channel there is a click in the telephone, and he locates the channel without the slightest difficulty. He then opens the fibre of the carpet with a round stick, and bores a hole in the floor and gets his wire up.

It was supposed that this would be very expensive, but as a matter of fact we have saved one hundred and sixty-six dollars on each floor of the thirteen floors of the building, and we never had to show a wire anywhere, nor have we ever had to cut a wall.

President Camp: With reference to the question propounded by Mr. Van Aken a few minutes ago, I might say that on the C. P. R. every connection of aerial cables entering a station is provided with a lightning arrester inside the station, either with or without fuses, if the protection is on the outside. It may happen that in case of a fuse being used only, your fuse connection with ground blows out, if a thunderstorm comes along during the night, and it interrupts your system and there would be no means of recovering it until you could get a man there by the next train, so that for aerial cables we use Kerite usually, instead of lead covered, and we do not place any protection on the pole.

So far, I don't think we have had a case of a station cable being injured by lightning. I do not remember of one any way. We consider it better to lose a cable than to have our wires interrupted frequently by lightning discharges during the night.

Mr. Chenery: As the hour is getting late, I would move that we now adjourn until tomorrow morning at 10 o'clock.

The motion being duly seconded by Mr. Davis, is carried.

FOURTH SESSION.

Friday, June 26th, 1908.

The session was called to order at 10:20 A. M., the President, Mr. W. J. Camp, being in the Chair. In opening the proceedings the President said:

I had intended to call this meeting to order sharp at 10 o'clock, as was understood yesterday afternoon, so that we could get through as early as possible, but, I had to go to the station in order to make some further arrangements about our sleeping car accommodation for tonight. Then I had so many interviews after getting back that it was impossible for me to open the session earlier.

I understand that the Secretary has some communications which he wishes to make before we proceed with the regular order of business.

Secretary Drew: I have a telegram from Denver, Colorado, addressed to me as Secretary of this Association. It reads as follows: "Hearty congratulations from Denver and the Rocky Mountains, one mile high, and everything dry. (Signed) C. A. Parker, J. M. Walker."

I also have a telegram from Mr. Groce, dated New York, June 25th: "An unusual turn of affairs has made it necessary for me to cancel my arrangements for attending the Montreal meeting. I regret this very much, and shall appreciate it if you will give this information to my friends who are so fortunate as to be able to attend. The Committee of which I am Chairman has not held regular meetings during the past year on account of existing conditions well known to all members of the Association. The prospects for accomplishing some beneficial results in the near future are good, and I shall be glad to lend my efforts to gain the desired results. Jennings, one of the other members

of the committee, joins me in this report. I hope you will have an enjoyable and profitable meeting."

The President: We have one paper to be read this morning, entitled "Developments in Wireless Telegraphy," by Mr. William Maver, Jr. I will call upon Mr. Maver to present his paper.

Mr. Maver's paper is as follows:

DEVELOPMENT IN WIRELESS TELEGRAPHY.

By William Maver, Jr.

Wireless Telegraphy is not altogether a new art. Over ten years ago Sir Wm. H. Preece, in England, succeeded in transmitting speech without wires between the Skerries Lightship and the mainland of Anglesey, a distance of three miles across water. This was accomplished by the use of parallel wires stretched on poles along the shore of the island and the mainland. A telephone transmitter on one wire set up magnetic waves that were received by a telephone receiver in the other parallel wire. It was assumed in this experiment—It is more than an experiment however, for the arrangement has been for years, and still is in practical operation—that magnetic induction through the air and electric conduction through the water assisted in the transmission of speech.

Another type of wireless telephony is that in which variations in the luminosity of a beam of light are caused to reproduce speech at a distance. This device, which in some measure, is analogous to the latest developments of wireless telephony by electro-magnetic waves, is due to Alexander Graham Bell, the inventor of the telephone.

In the operation of this device, Bell caused a ray of light to fall upon a small concave mirror carried on the center of a suitable diaphragm at the end of a mouthpiece. From

this mirror the ray was reflected as a parallel beam of light, and fell upon a distant parabolic reflector, in the focus of which reflector was placed a selenium cell. It is well known that the electrical resistance of selenium varies in accordance with variations of light to which it may be subjected. This selenium cell is made a part of a circuit containing a telephone receiver and a small battery. When the reflected light from the mirror falls on the selenium cell it takes on a certain resistance and a steady current flows in the circuit, depending on the amount of the resistance. When, however, sounds are spoken into the mouthpiece of the transmitter, the vibrations of the mirror on the diaphragm cause variations in the luminosity of the beam of light and these variations in turn affect the selenium cell causing variations in its resistance, and consequently variations in the current strength of the circuit, which react upon the telephone receiver and reproduce speech very clearly. But the distance to which speech has been transmitted by this device is rather short—about 300 or 400 feet.

Subsequently, Simon of Germany, discovered that if the resistance of the circuit of an arc light be disturbed by the introduction of a telephone transmitter in the circuit, the arc itself will reproduce speech spoken into the transmitter. The assumed explanation of this phenomenon is that it is due to rapid variations of the volume of the vapor of the arc caused by the variations of the current strength due to the vibrations of the transmitter when spoken into; the corresponding variations in the vapor of the arc setting up sound waves in the air. This is termed the speaking arc phenomenon. The following further explanation of or analogy to this phenomenon may be offered. The explanation of a thunder clap is that it is due to the rapid expansion and contraction of the air due to the lightning discharge. Analogously, we may consider the effect of the microphone trans-

mitter upon the arc to be the production of minute changes of temperature in the arc that in turn cause condensations and rarefactions of the surrounding air corresponding to sound waves which we may regard as miniature thunder claps and which, occurring as they do in response to the vibrations of the transmitter, due to the voice, are recognized by us as articulate speech.

Following Simon's discovery, Bell and Hayes found that the electric arc itself could be used as a transmitter of speech. Their method consists in placing the arc light in the center of a parabolic reflector. A telephone transmitter placed across the terminals of the arc light causes variations in its light which, although not visible to the eye, can be detected by a suitable detector in the focus of a parabolic reflector; this ih turn reproducing speech in a telephone receiver. (Described at length in author's "Wireless Telegraphy").

This idea was advanced a long step by Mr. E. Ruhmer, of Berlin, who utilized a sensitive selenium cell in the center of the receiving parabolic reflector and succeeded in transmitting speech due to the variations (caused by a microphone transmitter) in the intensity of a search light, to a distance of about 10 miles. Some of the selenium cells used by Ruhmer have a resistance in the dark of about 25000 ohms, which drops to about 1500 ohms in the light.

In all of these systems of wireless telephony it will be observed that speech is transmitted by modifying the ether waves that constitute light. Systems of this kind, however successful they might be in actual operation, would obviously be limited as to distance of transmission by the actual distance at which light is visible under the best atmospheric condition, about 30 miles, and in times of fog and thick weather, this distance would be largely reduced.

Early workers in this field quickly recognized that if it were feasible to modify the electro-magnetic waves used

in wireless telegraphy, a wireless telephone system might be developed that would be operative at distances, perhaps, approximating to that of wireless telegraphy, and that would not be limited in its operation by smoke, fog or other somewhat similar atmospheric conditions.

But the difficulty in thus utilizing electric waves has been that the waves set up by the spark in wireless telegraphy are highly intermittent and are very quickly damped. Assume, for example, that an alternating current generator or the interrupter of an induction coil, giving an alternating current of, say, 80 cycles per second, is employed as the source of current supply in wireless telegraph. These alternations, by charging the oscillator circuit, may give rise to a frequency of, say, 800,000 cycles per second in the aerial wire. Unfortunately, however, owing to the damping of the oscillations, due to heat loss and the loss due to radiating energy in the shape of electric waves, these oscillations die out very rapidly and last for only a very small fraction of a second, and in consequence of this effect there is a comparatively long interval between the spark discharges (nearly 1/60th of a second) during which time no electric waves are radiated. In wireless telegraphy these pauses or breaks, or rather the beginnings of the new discharges, are observable in the telephone receiver as a tone or buzz which is broken into dots and dashes by the Morse key. Therefore, inasmuch as many of the tones, or overtones, that compose articulate speech consist of vibrations of 5000 to 8000 per second, it is clear that many of these tones would be lost during the pause between the spark discharges, which, of course, would conduce to inarticulate speech. Furthermore, obviously the noises in the telephone, due to the intermittent nature of the spark discharges, would prevent the successful transmission of speech.

To obviate this difficulty, a number of inventors have

directed their energies toward the design of a machine generator that would deliver a smooth alternating current of very high frequency, but until somewhat recently, not with very marked success, the irregularity of the machines making the reception of speech difficult. Mr. Fessenden has lately devised a machine generator giving an output of 2 volts and a frequency of 80,000 cycles per second at a speed of 8340 revolutions per minute. With this machine as the source of current supply, Mr. Fessenden reports that he has succeeded in transmitting speech between Long Island and Brent Rock (near Boston), a distance of about 200 miles.

Another method entirely different from the machine method, of obtaining sustained oscillations, is that due to Mr. Duddell's discovery of the singing arc. The principle of this discovery is that when an arc lamp, fed by a direct current of about 250 volts, is shunted with a suitable capacity, and an inductance, alternating currents of a frequency of 40000 per second are established in the shunt circuit. Mr. Duddell's explanation of this phenomenon is that at the moment when the shunt circuit is completed a current flows from the arc into the condenser circuit which decreases the current flowing in the arc. This causes an increase in the difference of potential between the terminals of the arc, causing still more current to flow in the condenser circuit and raising its potential above the normal voltage of the arc. In consequence the condenser begins to discharge back into the arc increasing the current in the arc and reducing the potential difference between its terminals. The condenser now discharges too much and the reverse process is set up and sustained or continuous oscillations are in this way maintained in the shunt circuit.

Owing to the comparatively high frequency and the smoothness of these sustained oscillations the telephone re-

ceiver will not, by reason of its electrical inertia, respond to them. Hence, if sustained oscillations, whether generated by a machine or by the arc, are to be utilized in wireless telegraphy some method of breaking the continuity of the waves has to be adopted, practically as, in certain other telegraph systems, a continuous current is broken by a buzzer and is heard in the telephone as a tone. Furthermore, while the telephone will not respond to the high frequency continuous oscillations of the Duddell arc, if the amplitude of the oscillations be varied to a degree that comes within range of the receptivity of the telephone receiver, as, for example, by speaking into a microphone transmitter placed in the aerial or in the oscillation circuit, the telephone receiver will respond and reproduce the speech spoken at the transmitter, practically as speech is reproduced by varying the amplitude of the waves of a beam of light in the cases mentioned.

So long, however, as the oscillations of the singing arc were limited to about 40000 per second, but little practical use could be made of it owing chiefly to the weak magnetic effects at comparatively low frequencies, and the consequent inability to radiate wave energy of much power. Fortunately, it was discovered by Poulsen, the inventor of the telegraphone, that if the singing arc is placed in an atmosphere of hydrogen or other gas of high heat conducting qualities, the frequency of the oscillations are increased to a remarkable degree, namely, in some cases to 500,000 cycles, per second and over. It was also found that by burning the arc in nitrogen gas, compressed air or in steam, the frequency of the arc oscillator is much increased. The flame from an alcohol lamp placed under the arc also has this effect.

The electrodes of the oscillating arc consist of a solid carbon (negative) and a copper tube (positive). The cop-

per electrode is cooled by a stream of water passing through it; Poulsen having found that this cooling of the metal eletrode increases the efficiency of the arc as a generator of oscillations. The capacity used in some experimental installations is quite small, being about .02 microfarads, but information as to the exact proportions of capacity and inductance employed in practice are not at present procurable. The arc requires for its proper operation in producing oscillations in the shunt circuit, a current of certain strength and a certain length of arc. For instance, Poulsen has found that with a difference of potential of 220 volts at the arc it ceases to set up oscillations when the current falls below six amperes, with a water cooled positive electrode, or below four amperes with a non-cooled electrode.

The discovery of the oscillating arc opened the way for the use of these sustained oscillations in wireless telephony, and Poulsen and the Telefunken Wireless Company, in Europe, and De Forest in this country, have made considerable progress in telephoning to a distance by modifications of this arrangement of the singing arc.

When the oscillating arc is employed the inductance is made part of a transformer, the secondary of which is in the aerial wire circuit. De Forest modifies the oscillations by placing a microphone transmitter directly in the aerial wire. Poulsen modifies the oscillations by means of a microphone transmitter inductively connected with the supply or feed circuit of the arc. Fessenden modifies the oscillations set up by the machine generator by means of a microphone transmitter in the generator circuit: the generator and transmitter being connected in the aerial circuit.

A detector, such as is employed in wireless telegraphy, is availed of in wireless telephony. Fessenden and Poulsen use the electrolytic, or liquid barreter, or a thermo electric

couple as detectors, while De Forest utilizes the audion, all in combination, of course, with a telephone receiver in a local circuit. While quite a number of United States war ships have been equipped with De Forest telephone apparatus, definite reports concerning the operation thereof are not yet at hand.

The Telefunken Company in Germany, experimenting with wireless telephony, employ the singing arc burning in air with a water cooled copper electrode. It having been found that with the arc burning in air the frequency of the oscillations is increased by putting a number of arcs in series, the Telefunken Company place six of the arcs in series on a 220 volt supply circuit, and 12 arcs on a 440 volt supply circuit.

Reports of these experiments place the speaking distances at about 25 miles. These and other experimenters in wireless telephony in which the arc oscillator is employed, indicate that considerable difficulty is met with in maintaining a uniform tone of the voice in the telephone; the words being received in alternately low and high tones, rendering speech indistinct and very hard to understand. This is doubtless due to irregularities in the operation of the arc.

In connection with the wireless telephone experiments thus far made by Mr. Fessenden, between Brent Rock, Mass., and a station in the vicinity of New York City, it is reported that speech has been transmitted with an expenditure of only 200 volts, less than one-third of a horse-power. On this basis Mr. Fessenden concludes that with a mast 600 feet high and a an expenditure of ten volts it will be possible to telephone between America and Europe without wires.

It may be noted that Mr. Fessenden has in operation a wireless duplex telephone system in which he employs an

inductance and capacity to balance, as in wire telegraphy, but, of course, no resistance.

A great advantage to be obtained by sustained oscillations, both in wireless telegraphy and telephony, is that the property of resonance may be more fully availed of than with more or less intermittent oscillations. In some respects, however, perhaps, sustained oscillations and the better resonance gained thereby may be of more utility for wireless telegraph purposes than wireless telephony, especially as regards increased distance of transmission. This appears obvious if it be considered that in both wireless telegraphy and wireless telephony the receiving aparatus is practically the same. In wireless telegraphy, however, the full effect of the radiated waves from maximum to zero is available, whereas only a comparatively small portion of the received wave energy, namely the modifications of the wave energy due to the action of the microphone transmitter, (about five per cent. of the total energy, it has been estimated), is available in wireless telephony. Improvements in the direction of more powerful transmitters whereby a large percentage of variations in the amplitude of the waves may be obtained, are now to be looked for. It is stated that Fessenden expects to perfect a transmitter capable of producing a variation of twenty-five or fifty per cent.

As the writer remarked in the opening words of his paper on Wireless Telegraphy, read before the Association last year, "wireless telephony, if only available for a comparatively short distance, obviously could be installed to advantage in the officer's room of every ship that floats ocean, lake, river or harbor," because of the fact that it requires no specially trained operator. But it was, of course, assumed that the apparatus would be considerably less complicated than that in use in wireless telegraphy. At present

this is not the case, and the amount of expertness necessary to properly manipulate the present apparatus is, no doubt, beyond that now possessed by the ordinary ship's officer.

Still, wireless telephony may now be said to have arrived at a point of practical utility, although, of course, as previously intimated, it is still susceptible of much improvement in many directions.

Telephoning without wires has the advantage over wire or cable telephony that it does not have to contend with the static capacity of the conductor. When, therefore, the necessary improvements in this art have been made it is, perhaps, not beyond bounds to expect that the claims now made by certain enthusiastic inventors, as to Trans-Atlantic Wireless Telephony, and which in some quarters are considered visionary, may be ultimately realized.

The President: Hardly a session of this Association passes but we have something of great interest from Mr. Maver. He has indeed been very kind to the Association in this regard, and on behalf of the Association I thank him most heartily for his able and most interesting paper.

Mr. Maver's paper is now open for discussion.

Mr. Davis: As Chairman of the Topics Committee, I wish to express my very sincere thanks to Mr. Maver for his most excellent paper, and I can assure him that it is most heartily appreciated.

Mr. Maver: I thank you Mr. President and gentlemen.

The President: I suppose Mr. Maver has covered pretty nearly everything in his paper, so apparently it does not leave us very little room for discussion. This as about the usual procedure with Mr. Maver's papers.

Mr. Davis: I think probably the reason why there are no remarks on Mr. Maver's papers is because it is too deep for us.

Secretary Drew: One of the great benefits of the papers presented by Mr. Maver is, that they are a little out of our direct line, and give us something slightly different from our direct business thought. It broadens our minds to have a man like Mr. Maver come in and give us something in a technical way about things in which we are all, of course, interested, but about which we are not as well posted as we ought to be. Another advantage is that by studying these papers if our general managers come to us some time and say, "Well, what do you know about Wireless Telephony" for instance, we are in a position to tell something about it. This is information which cannot be acquired by studying books or anything of that kind. It must be acquired through hearing some expert like Mr. Maver give practically a lecture on the subject.

I think we certainly owe Mr. Maver a debt of gratitude, and ought to thank him sincerely for what he has done for us in this particular line. I am sure we are all very glad to have Mr. Maver with us at our meetings, and to have him contribute something to our minutes each year.

Mr. Taylor: I would like to ask Mr. Maver what there is with reference to interference in the case of wireless telephony?

Mr. Maver: Well, of course the same rule applies in a measure, to wireless telephony, as applies to wireless telegraphy. That is to say the sustained oscillations and tuning is made very sharp and well defined, so that a circuit tuned to a certain rate of oscillation will not respond to any other unless it comes within the prescribed rate of percentage of oscillation to which it is tuned. In that way, interference is avoided to a very large extent.

One of the features or advantages of sustained oscillations is that you can make very close tuning.

Mr. Taylor: As I understand Mr. Maver, it would be possible, or at least it would seem to be possible that if wireless telephony is developed, you could maintain a distinction on the oscillations or tuning, and avoid interference?

Mr. Maver: That is the point, in a general way. Of course, that is something which practice will have to determine. Fessenden and other workers in wireless telephony claim that several hundred different rates of oscillation can be maintained, not one of which will interfere with any other.

Mr. Rhoads: Bearing on the point that Mr. Taylor brought up I may say that when the system was developed in the navy, they had a great many problems in that line of work. They had several sets of wireless telegraph instruments on the ship Brooklyn, and there were also several wireless telephone sets. I am imformed that they are working on an arrangement whereby five different telephone messages can be simultaneously sent without interference with one another, or without interference from the wireless telegraph. I understand they have been fairly successful in doing this. Of course this is merely a start but it shows what they are doing in that direction.

Mr. Foley: Dr. De Forrest made some experiments between our terminal at Hoboken and the ferry boats moving in the river, with very good results. He is now establishing communication between our Hoboken terminal and 23rd street, a distance of about two miles.

Mr. Millington: I suppose that the wireless telephone will be more successful over the sea than over the land, the same as the wireless telegraph?

Mr. Maver: I think so, for long distances at least.

President Camp: If there are no other remarks in connection with this paper I will declare the discussion closed.

That completes our list of papers as submitted by the Topics Committee. Is there any other business before the meeting.

Mr. Millington: If it is not out of order, or in conflict in any manner with the ordinary rules of our proceedings, it seems to me that now having listened to this very interesting paper that this would be an opportunity to have what we have not had at this convention. This is an age of progression when the atmosphere is being mastered by air-ships (some of them propellel by the hot air method), I think we are entitled to at least one more oratorical flight.

I recall the fact that yesterday afternoon we elected a Vice-President, who was absent at the time entertaining the ladies. This gentleman has spent a good deal of time burning midnight oil preparing his speech of acceptance of the high office to which we elected him, and now that he is present I think this is the psychological moment to hear from our Vice-President elect.

The President: I intended to call on Mr. Dailey to explain how he got out of the way yesterday. Will Mr. Dailey please come forward and let us hear some of his silver tongued oratory?

Mr. Dailey: My friend, Mr. Millington, to the contrary nothwithstanding, I have to say that I did not burn any midnight oil preparing a speech of acceptance. I was too tired when I got back after my efforts of yesterday.

Yesterday afternoon, in my absence, you did me the honor of electing me Vice-President of this organization, and when I got back from a very pleasant trip I received a very pleasant surprise.

This is an honor which I appreciate very much, and one

which I know our road will appreciate very much. I did not think I would be called upon to make any speech, but just as soon as I came in, Brother Millington, with his usual promptness and forcibleness, spotted me and called me out, long before I was prepared to say anything.

As for oratorical flights, I don't know very much about it, although I believe a railroad official nowadays has to be a lawyer, an orator, a grafter, and a man of sound common sense.

The President: Did I understand you to say that he had to be a lawyer, or is it possible that you mean he has to be a liar?

Mr. Dailey: He has to be a little of both.

I do not know that I can say anything more to you except to repeat that I appreciate the honor you have done me very much, and shall do all in my power to deserve it, and to further the interests of the Association as much as I possibly can.

There is one thing which has been in my mind for a long time, and that is, I honestly think there is just as much brains and ability stored up in the heads of the Telegraph Superintendents as in the heads of any Superintendents connected with the railroad, and I do not see why this organization should not become just as strong, and just as important as the Signalling Association, for instance, or the Engineering Association, or any of the other associations of railroad officials. If we work together, and pull together, I think that probably we will reach that stage some day in the not very distant future, and the railroads will be very glad to have us meet and exchange ideas, knowing that it will be to the ultimate benefit of the road.

Mr. Millington took me entirely by surprise, and I must disappoint him in regard to the flights of oratory.

As I said before, I will do my best, and will help our President in any way I possibly can. If he calls upon me, I will endeavor to do my best for the benefit and welfare of the Association, in order to bring it to the state which we all fondly hope it will some day occupy.

The Secretary: For the benefit of some of our recently elected members, I would like to say that we have two sections which meet about once every three months. The western section holds its meetings in Mr. Dailey's office, which is on the 15th floor of a fine building owned by the North western. We get around there at those quarterly meetings and have an interesting session, then Mr. Dailey and some of his railroad officials invite us in and we have a nice little lunch in their dining room.

Mr. Dailey: I would like to extend the same courtesies and the same invitation to any of the visiting brothers from the East any time they happen to be in the vicinity of the North Western Railway.

Mr. Taylor: I would like to know the dividing point between the Eastern and Western Sections, referred to by our Secretary?

Secretary Drew: We rather accept it that any road that runs into the central time limit is in the Western Division; the Eastern roads are supposed to take from Buffalo to Pittsburg and down the line east and south. It is not an arbitrary division, by any means. Any man from New York would be gladly welcomed in the Western Section if he happens to be there; and I am very sure that if I happen to be in New York or Philadelphia or wherever the meeting was held, I would feel that I was at liberty to attend.

We do not want it understood that this dividing line is arbitrary at all, because that is not the fact. The place which is most convenient for any man to go is the place where he is welcome.

Mr. Selden: The Eastern Committee meets at Baltimore, and we are always glad to see any of the members from the Western Section or from any where else. We also furnish lunch. Further than this, I would say that our latch string is not always out, because the door is always open.

Mr. Van Etten: The point is to get some kind of a notice. I would have been glad to attend the meeting in Chicago, but I did not receive any notice that I know of. I did not know anything about it, until a friend of mine was talking to me on the train coming in.

I am glad the matter has come up so that some arrangement can be made with reference to notifying the members.

Mr. Chenery: I must confess, that, perhaps I am responsible for not having notified the gentlemen. There was no defined distinction as to who would go to the Western Meeting, or who would go to the Eastern Meeting.

As our Secretary has said, the Eastern Division was presumed to be composed of those members who represent roads which run east of the Central Time Limit. I know when sending out notices I have picked out mostly those gentlemen who had made some enquiries about our Western Association, or whom I thought would be able to attend.

We have had those meetings in the west for years. I think our Annual Meeting at Atlantic City last year was the first time that any mention was made of such a division. It was then decided that we would have two divisions, one in the East and one in the West. Perhaps we are advanced far enough now to outline some definite action.

If that Committee is to be continued for the next year, we will probably come before you and arrange to hold Meetings at the same place, perhaps, or at least on the same day of the month.

The President: I think it would be as well for us to let

that matter stand, until we come to deal with the report of the Committee.

I wish to say that one of the points of satisfaction to me when I was elected President of this Association, was the fact that you elected Mr. Dailey as my assistant. As you all know I have not any oratorical powers, and I will rely upon Mr. Dailey to supply my deficiency in that respect. I know that in all other respects I can count on his most hearty co-operation.

Mr. Rooke: If I am not out of order, I would like to ask, as a matter of information, how many miles of single track is being operated on the roads which have adopted the telephone for handling trains.

The President: Can Mr. Ryder supply the information?

Mr. Ryder: I have not the information at the moment, but I should imagine the different members could give, approximately, the information asked for.

On the Burlington we have at present in actual operation about 225 miles of single track.

Mr. Foley: The Lackawanna has forty.

Mr. Van Etten: I understand that the Illinois Central has 100, or is about to put in about 100.

The President: The C. P. R. has their only circuit so far on single track.

Mr. Millington: The Michigan Central has full authorization for the construction of about 185 miles of single track, to be completed inside of about six weeks or two months.

Mr. Dailey: The North Western has eighty miles of single track in operation, and 120 miles under construction, and 200 miles authorized.

The President: We have a Committee on "Pole Construction, to withstand Sleet and Wind Storms." This Committee consists of Mr. William Maver, Jr., M. C. H. Bristol, and Mr. F. F. Fowle. The only member of the Committee present is Mr. Maver.

Have you any report to make Mr. Maver?

Mr. Maver: The Committee was not able to do anything owing to the conditions.

The Secretary: You will remember that the Committee sent us a very elaborate request for a great deal of very valuable information, but this request came just at the time when we were having so much trouble in regard to the eight and nine hour law. I do not think any Superintendent could have taken the time required to give all the information which the Committee desired in order to formulate its report. I wrote Mr. Maver telling him that I did not believe he could do anything in that line, just at that time. We were all so much occupied with this other matter that we did not have the time to attend to it.

Now, whether we should go on for another year or not is something which I do not know. It seems to me, Mr. President, that most of us are bound down by the rules of the Telegraph Companies in regard to construction, and I think it would be almost a waste of time for us to try to get up any scheme for constructing lines outside of their requirements in their contracts with Railway Companies.

Under the circumstances I would move that the Committee be discharged.

Mr. Selden: I second the motion.

(The motion being duly put to the Meeting, was carried).

The President: The next Committee to report is the "Committee to Formulate Method and Confer with General Managers' Association". The members of that Committee

are E. P. Griffith, W. W. Ryder, C. S. Rhoads, G. H. Groce, and C. Selden. They are all present with the exception of Mr. Groce. Mr. Griffith is the Chairman of the Committe. I understand that he has a report to present.

Mr. Rhoads: Mr. Griffith has been called out for a few moments, and he asked me to say for him, as Chairman of the Committee that the conditions changed so rapidly following the date of the last Meeting, that the object of the appointment of the Committee solved itself, and the General Managers have rapidly been converted to the telephone idea. This left the Committee with really nothing to report, other than the fact that the matter had been taken care of by the rapid making of history.

I move that the Committee be discharged.

(This motion being duly seconded by Mr. Ryder, was carried).

Mr. Van Etten: In selecting the place of meeting yesterday, we did not name any date. I would, therefore, move that the Meeting be held June 23rd, 24th, and 225th. Those dates bring us in the same week, and the same days as the present meeting.

The President: It has been moved by Mr. Van Etten, seconded by Mr. Davis, that our next Annual Meeting be held June 23rd, 24th, and 25th, 1909.

The motion was declared carried unanimously.

The President: We will now have the report of the Committee on "Matter of Record". The members of that Committee are Messrs. Hope, Davis and Cellar. Mr. Hope is absent, but Messrs. Cellar and Davis are present. Has the Committee anything to report?

Mr. Davis: I have had a blank handed me by the Secretary just a moment ago, and I think all the members (especially those who were present at the Meeting in Atlan-

tic City) know what the object of sending that out was. It was for the purpose of formulating everything that could be used by the rialroads in showing the actual amount of time consumed by the operators at each of the Stations in doing certain kinds of work.

Speaking for the Chicago and Eastern Illinois, I would say that the blank as prepared by the Committee was used, and we followed out the wording of this blank and its intention right to the letter; with the result that when the data was taken over to Washington we could show just exactly what amount of time was consumed by every one of the operators in every one of the offices in different kinds of work.

I believe nearly all the Railroads did the same thing.

Although we did not gain our point there, we have the satisfaction of knowing that the Chairman of the Interstate Commerce Commission said that we had put them up against a very hard proposition, and made their work very difficult.

Although we did not win our point, I do not think the effort was wasted by any means.

I considered that the work of the Committee has been done, and that there is nothing further for it to do. I would, therefore, move that the Committee be dismissed.

(This motion was duly seconded by Mr. Williams, and carried).

The President: We now come to the reports of the Sub-Committees on Quarterly Meetings. We will first hear the report of the Eastern Sub-Committee, composed of Messrs. Selden, Foley and Taylor.

Mr. Selden: We held but one Meeting, and only had matters of a Legislative character before us, consequently the report could only be made in Executive Session.

A stenographic report of the proceedings was taken and forwarded to the Chairman. I believe this report has been circulated among the active members.

Matters came up which were not for public discussion, therefore, we have no further report to make.

The President: The Western Section Committee is composed of Messrs. Chenery, Davis and Rhoads. I understand Mr. Chenery has a report to make.

Mr. Chenery: We held four Meetings in Chicago, and discussed not only the same subject as Mr. Selden refers to, as having been discussed by the Eastern Section, but we also discussed other matters both of local and general interest.

At our first Meeting we decided that we would not have a stenographic report, but after having received the very complete report of the Meeting held in Mr. Selden's office, we decided to employ a stenographer for our future meetings.

The purpose of those meetings, as outlined in Atlantic City, was that each division would make reports and send them to each other. So far as we in the West are concerned, we failed in that respect. I hope we will improve on our methods next year.

The President: Is there any intention to make a report in Executive Session this year?

Mr. Selden: We considered that it was our duty to keep each other informed as to what was done, and if any matter of general interest came up to have it handled by the Association.

The only matter of very grave general interest that came up was of such a character that we treated it as a Legislative matter, and handled it only in Executive Session.

Mr. Ryder: I would move the acceptance of the reports of the Committees, and the continuance of the Committees.

(This motion was duly seconded by Mr. Dyer, and carried).

The President: This completes the report of the Standing Committees, with the exception of the Committee on Acknowledgments for Courtesies received. I will appoint Mr. Taylor and Mr. Millington a Committee to draft acknowledgments to the different concerns who have tendered us courtesies, and would ask these gentlemen to get to work right away, in order that they may report before we adjourn.

Mr. Davis: With the permission of the Meeting, I would like to read a letter which I have received from Mr. Frank F. Fowle, as Chairman of the Topics Committee.

Mr. Fowle says, "I regret to inform you that I do not now expect to be in attendance at Montreal, because of the necessity of my appearance in Court as a witness upon a case for which I have been engaged some time past.

"The paper which I promised to present is not in readiness, but with your permission I will complete it for publication in your annual proceedings.

"I deeply regret that I shall be unable to attend the annual convention, and I trust that you appreciate the circumstances which prevent my doing so.

"You have my best wishes for a successful programme, and I hope that my absence will in no way mar it.

"Please remember me kindly to all."

Yours very truly,

F. F. FOWLE.

Mr. Fowle, as you notice asks that we allow him to complete his paper and that he may send it in in time for publi-

cation in the minutes. I would move that we ask Mr. Fowle to complete his paper so that it may be incorporated in our minutes.

If you desire this I shall answer Mr. Fowle telling him that we shall be glad to have his paper.

This motion being duly seconded by Mr. Chenery, was carried.

The President: What other business have we before us at this time?

Mr. Davis: If it has not already been done I would like to move a sincere vote of thanks to the Arrangement Committee for the splendid manner in which they have taken care of us during our stay here, and for the provision they have made for our entertainment.

I do not think there is anyone here who does not thoroughly appreciate the courtesies which have been extended to us. Personally I think we have had a most successful meeting, from every point of view, and I think the Committee on Arrangements deserve a hearty vote of thanks from the Association.

Mr. Dailey: I thoroughly agree with what Mr. Davis has said. I think this has been a most successful and pleasant meeting. I for one have enjoyed it thoroughly, and I hope that our future meetings will be as well attended, and that future Committees on Arrangements will do as well by us as the Montreal Committee has done.

I have much pleasure in seconding Mr. Daivs' motion of thanks to the Committee on Arrangements.

The Secretary: Gentlemen, you have heard the motion, and it is not necessary for me to say anything in connection with it. I know we all appreciate what has been done for us by the Committee on Arrangements, and the splendid man-

ner in which it has been done. I am sure our trip to Montreal is one that will be long remembered.

What is your pleasure with regard to Mr. Davis' motion that a cordial vote of thanks be extended to the Committee on Arrangements for the splendid manner in which they have looked after us during this meeting? Those in favor please stand.

The motion was carried amid applause.

The President: As Chairman of the Committee on Arrangements I wish to thank you very heartily. My part of the work has been very light indeed, owing to the co-operation of the other members of the Committee.

We only found it necessary to hold two Committee meetings. Mr. Magiff of St. Albans, came up to both meetings, and Mr. Forristall attended one of them. The other members of the Committee did not find it possible to attend.

As regards the arrangements made on the C. P. R., I must tell you that I did not have very much to do with them personally. Those arrangements were carried out by Mr. Kent, the manager of our telegraph system.

Mr. Ashald: As a member of the Committee on Arrangements I desire to express my thanks to the Association.

The President: For the information of the members in attendance we have arranged that the C. P. R. official time shall be given here today. This time is transmitted to every office on the C. P. R. system each day. When I say every office I mean every office on the raiyway system, and every commercial office of the Company. It is also transmitted to the Azores, to the West Indies, Fiji, etc.

Mr. Selden: Where does it come from?

The President: We get it from McGill Observatory.

A few years ago, under the auspices of the Government, signals were exchanged with Canso, Waterville and Greenwich, the different parties concerned changing places, so as to eliminate the personal error. Finally, as a check on the whole thing the circuit was connected through repeaters direct between McGill Observatory here and Greenwich Observatory in Great Britian. The time was compared, and after that the different observatories on the continent compared their time with McGill.

Mr. Taylor: I would move a vote of thanks to the Committee on Topics, for the able manner in which they have looked after the programme, or business end of the meeting, and for the splendid papers which they have provided.

In addition to this motion of thanks, I would suggest that we appoint the same committee for the coming year. I do not think we could do any better if we were to try from now till the date of our next meeting.

The President: With the consent of the meeting I will reappoint the Topics Committee, as suggested by Mr. Taylor.

The members of this Committee for the ensuing year will therefore be Messrs. J. L. Davis, E. Parsons and Percy Hewitt.

The next matter before us is the question of appointing a Committee on Arrangements. With the approval of the meeting I will appoint Messrs. Millington (Chairman), Marshall, Kinsman, Ashald and Kline.

So far as the Ladies' Reception Committee is concerned I think it would be as well for us to leave that in the hands of the Committee on Arrangements.

Is there any further business before the Chair?

Mr. Lathrop: There is something which I would like to

bring before the meeting, if it does not interfere with anything else.

It seems to me that there is a great variance in the methods used by the different Telegraph Companies, the Railway Companies, the American T. and T. Company, and some of the independent Companies, operating over railroad lines. I refer to the standards. It seems to me that it would be a good idea to have a Committee on Standardization on pole construction. I think it would help every Superintendent of Telegraph to have that class of work taken charge of.

I may say that the Signalling Association (of which I am a member) have such a committee, and I believe it would be a good idea for this Association to get in line and make itself heard.

The President: For the past two years we have had a Committee on Standardization.

Mr. Lathrop: I am informed that some of the Committees were discharged, and I was wondering if this was one of them. Personally I would like to see a Committee of some kind appointed on Standardization.

Since we have gone into the telephone business, and have various sizes of wire, and various constructions, it seems to me that we will have to meet conditions that we never looked for before, and that we will have to face difficulties that no single company has to face.

I do not think the telegraph or telephone companies would take exception to such an action, but on the other hand they would be glad to aid us.

I would like to see this Association get to the front and make itself heard.

The Secretary: I would like to ask Mr. Lathrop if he has any contract with any telegraph company?

Mr. Lathrop: We have a contract with the Eastern Union.

The Secretary: Then, you cannot do a single thing without the Western Union telling you to do it, and even then you will have to do it the way they say.

Mr. Lathrop: If we had a committee to work on that it might improve the matter.

Mr. Selden: I understand that Mr. Fowle has intimated in a letter read here to doy that he will have his paper ready for publication in our minutes. Will this paper not show what has been done by the Committee?

The President: I am afraid it will not.

The Committee referred to was composed of Mr. Wm. Maver, who is a consulting engineer, and an expert on such matters, Mr. C. H. Bristol, General Superintendent of Construction of the Western Union Telegraph Company, and Mr. F. F. Fowle, who at that time was in the railway department of the A. T. and T. Company.

Mr. Lathrop: I did not understand that the Committee was disposed of. I beg your pardon.

Mr. Davis: I am afraid that there is a misunderstanding in regard to the matter, or at least in regard to a part of it.

Mr. Fowle was asked to read a paper before this Association, on the subject of the telephone. This paper is not ready yet, but it will appear in the minutes.

So far as the work of the Committee is concerned the paper will not deal with it at all.

The Committee has been discharged, and the only thing to do now is to let the matter drop, or appoint another Committee. If it is the intention of the meeting to appoint another Committee on the same subject I would suggest that we appoint the same men again. I do not see how we can possibly beat them in that line of work.

Mr. Boyce: I would like to ask whether this year there is any Committee in charge of the matter of high tension crossings over railway company's property?

I think it would be well to have this matter looked after in some way—either appoint a special Committee to take care of it, or to put it into the hands of some other Committee as part of their duties.

We have a great many bare lines crossing our road, and I think it would be a good idea to have the matter enquired into.

The President: We have had a Committee on that subject for the past two years, and they brought in their report and were discharged. The whole thing was fully threshed out last year. This was not only the case last year, but a few years after I joined the Association the same thing was gone into and fully dealt with.

Mr. Boyce: There is no uniformity of method, as I understand it. I know that a great many of the Companies are revising their specifications, and I think this would be a good time to take the matter up.

Mr. Lathrop: I was going to propose that the gentleman who made the motion that the Committee should be discharged, might withdraw his motion, and we could then continue the Committee for another year.

The Secretary: But, we do not want the Committee.

The position we are in is this—there are certain rules which they give us, and that is the end of the matter.

Mr. Lathrop: Does that apply to overhead crossings?

Mr. Dailey: There is one thing that Mr. Bristol has nothing to do with, and that is the overhead crossing. The railroad company has to do with that entirely. I am now referring to the high tension wire crossings over the road.

Every week or so we have requests from electric light companies, and others, for permission to cross our tracks with electric light wires, or other high tension wires. This is a matter that we have to deal with ourselves. We are not subject to any outside interference in this case, from the Western Union or anybody else.

It seems to me that this is important enough to have a Committee appointed to deal with, and see if we cannot get together and have standard rules for those crossings.

We have two or three different kinds of crossings on our road, and I say frankly I do not know which one is the best. It seems to me that if the matter were specially taken up by a Committee of this Association, and this Committee made a report, we would be glad to take their conclusions as to which of those plans of crossing was the best.

I believe we ought to have somebody appointed to determine that, or to at least look into the subject and bring it up for discussion and bring it up at some of the Eastern or Western Quarterly Committee Meetings. I believe we ought to have a standardization of that kind of crossing.

The President: In order to bring the matter regularly before the Meeting we will have to have a motion.

Mr. Davis: Under those circumstances I would move that a Committee be appointed to draft up specifications for high tension and other crossings for Railroad Companies, where the poles are on the right of way of the Company.

Mr. Williams: I will second Mr. Davis' motion.

The Secretary: We have had that question up for years. It has been in our Minutes right along. You will find it dealt with at pages 218 to 229 of last year's Meeting. The topic was then very thoroughly covered.

Now, what is the use of going over this ground again?

If you will look at the Minutes you will find that this matter has been thoroughly dealt with.

Under the circumstances I move that the resolution be tabled.

This motion was duly seconded by Mr. Walstrum and on being put to the Meeting was declared lost.

Mr. Cellar: It is very true that we have had a Committee on wire crossings, for a number of years, and that we have had full and voluminous reports on the subject, but we must bear in mind the fact that this question of crossings, and especially the question of high tension crossings, is a very live one today. It is also true that a very great number of the wire crossing constructions over some roads is very defective, and I think that anything we can do as an Association, in the matter of united effort to secure even a small percentage of improvement is time and money well spent.

Mr. Dailey: I think Mr. Cellar is perfectly correct.

This Association did outline certain plans but they have not been carried to fulfillment. I do not think there is any use starting something unless you finish it. The immediate effect of our first effort was that in certain States we were instrumental in having laws passed governing the construction of crossings over railroad tracks. In the State of Iowa we have had a law passed which has been of great benefit to our road and to other roads, because now we can have a crossing which has to be approved of. Before that there was not any such law, and they could put in almost anything they liked.

I think the proper thing for us to do is to keep up this agitation on the whole question, and to work at it with a determination to have the matter improved. Whether this be done by one Committee, or by two Committees is imma-

terial. The point is to keep the question before us, and to keep it before the various Legislatures.

What we want is good, safe construction, and we never would have anything of the kind, if we did not keep at it. So, if the old Committee is discharged, we ought to appoint another Committee, or we ought to do something to keep the question up, and to give us a general programme looking in the direction of standard construction.

Mr. Dyer: I think much good can be accomplished by such a Committee. While I admit that the construction rules made by Mr. Bristol, ought to be followed, in regard to the Western Union Pole Lines, I do not see any objection to coming to an understanding in regard to telephone lines, or electric light lines.

The Secretary: The question is now in regard to crossings over the railroads.

Mr. Dyer: I am leaving that aside for the moment. It seems to me that the Committee could handle the matter of overhead crossings. In Utah, Nevada, and a part of California, a number of large power plants are being erected to deliver power to the mines. We have been up against it time and again there in regard to the crossings. There seems to be a rule out there which has been followed for a number of years, that twenty-two feet above the Railway is sufficient. Upon the Southern Pacific, after the matter had been taken up by the Railroad Commission, in connection with the Santa Fe and others roads, the engineers appointed to handle the matter decided that the crossing should be thirty-three feet above the Railroad. This compelled the Companies to use thirty-five or forty foot poles, and in some instances, even forty-five foot poles, according to the lay of the ground. Before that they practically paid no attention to the Railroad Companies in their requests for making such

crossings. It seems to me that a Committee appointed by this Association might consider, or formulate a rule that would be considered fair and right and safe for all concerned, and would enable us to obtain Legislation in the various States to compel those power companies that cross our tracks to make their crossings in a safe and proper manner.

I think this is a very important matter, and I would like to see a Committee appointed to look into it.

Mr. Chenery: If the purpose of this Committee is to secure information to present to the various Legislatures when they meet next, and to attempt to secure some law in the States where there is none at the present time, I would say that the appointment of such a Committee would be all right.

The Secretary: So would I.

Mr. Chenery: As a matter of fact we have talked of this matter pretty thoroughly at preceding meetings. Before the last Legisulatures met in the various States this Association, through its members, attempted to secure some Legislation in regard to those crossings and we were successful.

A great many of the members here present will remember that the laws of Michigan were taken as a pretty good type. Ohio was another State which was pretty considerate. Canada is also pretty well forward. It was also pointed out that very recently similar laws, or laws that answered our purposes fairly well were passed in Kansas.

I know so far as the territory to which we run is concerned, that we were unsuccessful in getting laws passed in Missouri and Arkansas. I believe, however, that laws were passed in Colorado and Wyoming. Mr. Dailey informs me that similar laws were passed in Iowa and possibly in some other States.

However, through the members of this Association, we have been able to do a great deal. But, it does not seem quite clear to me how a Committee can formulate and standardize construction methods and expect them to be lived up to in all the States, because all the States are not alike.

If, however, a Committee is to formulate such information as they can respecting the various States, and attempt to secure similar laws in States where there are no such laws. I would be glad to see such a Committee appointed.

Mr. Rhoads: Many of you, no doubt, noticed that within the past sixty days, there was a meeting of the Railway Commissions of several States of the middle west. This meeting was held in Chicago, and I was glad to observe that one of the items which they had up for discussion was the need of better protection to Railway property and Railway employees, by making it a mislemeanor for people to walk on the right of way.

A suggestion was made by them that they talk it over with the different Legislatures.

One of the greatest things I fear in my territory in regard to many of those crossings is owing to the broken insulators on the poles, which makes it dangerous, owing to their liability to fall on our wires, or for our wires to fall on them. During the last year, I may say, that we had forty-two thousand insulators renewed on our road. The Railroad Commission proposed, as far as possible, to make it a misdemeanor for people to walk on the right of way.

Well, we were not able to get the law through in Indiana. It was presented to the attorneys who were handling the Legislative affairs, but owing to the agitation against the Railways, it was decided that it was best not to take the matter up.

Now, however, this move coming from the Railroad Commission will aid the Railroads a great deal.

Mr. Van Etten: Might I ask whether Mr. Groce is Chairman of that Committee.

Secretary Drew: Yes, Mr. Groce is Chairman of the Committee. His report is here in the Minutes, covering eight pages. He mentions the different States, and what they have done, you will find that nearly all the States have brought the matter up, that it is almost exclusively in the hands of the Commissions. They are the ones who are going to see about high tension crossings, and designate what they shall be.

Mr. Selden: There are a great many States which have no Railroad Commissions at all. I believe Maryland has none.

The Secretary: You will remember that we got up a very elaborate circular, in reference to a law that we wished to be passed. We headed this "Protection of Train Men."

The main object of trying to cover the high tension wires crossing the tracks was to protect the train men. We thought that by heading it that way it would have a greater effect on the Legislatures, before which it would be presented.

We sent out hundreds of copies of that circular. Some of the roads asked for as many as forty or fifty of them, so that they could present them to all those who were favorable to it in the Legislatures.

These copies were printed and distributed at our expense and did the work, to a great degree, upon which the Committee reported.

I think it is all right to have a Committee to keep up an agitation if you want to attain something, but I do not see what the object of a Committee is after you have gained all you can expect to attain.

Mr. Dyer: It appears that in some States satisfactory Legislation has been obtained. Now, since one Committee has done so much good work, don't you think another Committee might accomplish the same result in other States?

Discussing the matter with the Commissioner in Nevada, he wanted to know what had been done in other States. I told him, as far as I could. I think that with the endorsation of an Association of this kind, recommending certain crossings, we would have considerable influence behind us, in our efforts to obtain what we want in the States which are not now taken care of.

Mr. Cellar: We must all bear in mind that this question of wire crossing construction is not a dead and buried thing. I don't care what we have the Committee for. What we want is to keep up the agitation, and I think we have had enough success in the past, and from the testimony given by the gentlemen who have addressed us, to warrant us in continuing a Committee on wires.

We have cases coming up every day when permission is asked from us to construct wires carrying one hundred thousand volts across our right of way. This is something that ought to be given careful thought. We are all liable to have that kind of thing occur at any time.

I think the very best thing we can do is to secure the hearty co-operation of every member of this Association in keeping up the agitation for the proper construction of those crossings. If we do this I have no doubt that the Railway Commissions will help us out.

While the laws in some States do not empower the Railway Commission to take special notice of the wire crossings, I find that some of the Commissions themselves are taking the matter up and giving us all the help they can, and it will only be through the team work of the whole Association

that we will receive the fullest effect of any effort made in the direction I refer to.

Mr. Chenery: In order that I may be understood as being in hearty co-operation with the members on the subject, I would move in amendment that the purpose of the Committee be to enlist the efforts of all the members and legal departments generally to secure Legislative action on this subject at the next meeting of the various Legislatures, in States where no such laws now exist.

Mr. Davis: Before you can do anything in that line I believe there has to be a Committee on Standardization. Before we can go to the Legal Department and talk to them, we have to have certain information in regard to what we want done. We have to be in a position to say what we want.

On the Chicago and Eastern Illinois any body who wants to string a wire across the railroad is referred to the Engineer of Maintenance of Way.

Mr. Drew: On a public highway?

Mr. Davis: Yes.

Mr. Drew: It seems to me that they have the right to do what they like on a public highway.

Mr. Davis: In many cases they come to us and say they would like to have an understanding with us, in order that we might agree.

Secretary Drew: That is all very well on private property, but not on a public highway. On a highway they have as much right as you have.

Mr. Davis: Well, at the same time, we have had a little trouble, and I don't know the proper thing to do.

I wrote to Mr. Cellar and asked him if he would not let me have a copy of their Standard form of agreement, but

not in one case have I been able to have that agreement accepted by the fellow who wants to string wires across our right of way. They simply come and say the construction we put in is good and they go ahead and string up their wires, and after the wire is there you have to fight them. We are practically helpless as things stand at present. Those people have said in a great many cases, "It is ridiculous to ask us to put up a construction of that kind. Nobody wants to spend eight hundred or twelve hundred dollars for a crossing."

As a result of that, I got together with the Signal Engineer of the Railroad, and we called in the Chief Lineman and Signal Supervisors. We held two or three meetings, and tried to work the thing out. We sent out Chief Lineman to get information and we got some splendid information from Mr. Millington on what we were trying to do.

In one case we are trying to get a fellow to sign a standard agreement or put it up to the State Commission. He said, "Don't do that, because if we once get it into the hands of the Commission nobody knows what it will mean to me."

Before we get any Legislation we ought to get together, and determine what we want, and what we expect to get.

If Mr. Chenery's amendment incorporates that, I am most heartily in accord with it. I think it would be the duty of the Committee to figure out what kind of crossing we ought to have, and also to study out what constitutes a high tension current and what constitutes a low tension current.

As the matter stands now, I believe an electric light circuit is considered as a high tension current, although it is only one hundred and ten volts.

I think if the Committee is appointed it should work out what we want, and submit it to the Association for approval, before we try to have it made legal.

The President: It is moved in amendment, by Mr. Chenery, seconded by Mr. Selden, that the purpose of the Committee be to secure such data as may be necessary to bring about Legislation covering wire crossings in States where no such laws now exist.

Mr. Cellar: I would suggest that the words "To bring about Legislation" be omitted from the motion.

Mr. Dyer: If Mr. Cellar will put that as a motion, I will be glad to second it.

Mr. Cellar: I will do so.

The Secretary: If you do not secure Legislation you cannot do anything. Of course, it is a different thing where a party comes along on a farm, and wants to run a wire across your tracks. That is a question of your own private property.

If, however, a telephone company, gets a Charter, or if an electric light company or a street railway company gets a Charter to occupy and make use of a highway, you cannot do anything with them. You cannot stop them, and you cannot make them put up anything except what they are compelled to do by the State.

Of course, if a man comes to you, and wants to cross your road, where it is private property, you can impose any obligations you please, because the property is yours, up to the sky. When it comes to a question of a public highway crossing, properly opened by a County Commissioner, and a company gets a right to string wires along that public highway, they can go across your road and you cannot stop them.

So, if you drop out the question of procuring Legislation you are helpless. You can go to a man and say, "I want you to put up an eight hundred dollar crossing, where you are going over my tracks." He will simply smile and answer, "Go to!"

Mr. Dyer: In explanation of my seconding of that motion and in reply to Mr. Davis, that we must first get up some kind of a rule or regulation before we ask for Legislation, which rule or regulation we can use as a basis for what we want, I may say that I have in mind the instance of one little power company in Nevada which is willing and anxious to do anything that is fit and proper.

The Secretary: Do they want to cross your lines on a public street?

Mr. Dyer: No.

The Secretary: Then that is an entirely different thing.

Mr. Dyer: If we show those companies that we are backed up by an organization such as this, which has considered and approved of the rules and regulations for such crossings I do not think we would have any difficulty in making them do the work that we want them to do.

I agree with what has been said in regard to having something to present to the Commissions or Legislatures, when we go before them. I think there is no use of going before them without knowing exactly what we want.

Mr. Cellar: The amendment I seek to make is one which will broaden the Committee's work, and not confine it to efforts for Legislation.

The Committee would have a lot of work to do before it reaches the Legislative point, and that is the reason why I offer my amendment as far as the securing of Legislation is concerned.

As far as securing crossings according to our Standards is concerned, I must say that we have had some success, notwithstanding the fact that some of the crossings were on the highway. I quite appreciate the fact that any regularly organized company with ordinary powers can cross the right of way of a railroad on a public highway, if it wants to.

I think this is a subject that requires untiring effort and co-operation, and that everybody who has the interests of this organization at heart, and the interests of the Railroad generally should give the matter his careful consideration.

It is for those reasons that I would like to see the amendment obtained.

Mr. MacFarlane: This question has been up for years and years. I do not know but what I was one of the most insistent members of the organization in bringing it to the front. We have bumped up against it pretty hard.

We all know pretty well what construction is necessary for those crossings, but, at the same time, we have to recognize the rights of the other fellow.

You cannot do anything except through Legislation, or by convincing the man who wants to cross your right of way, that he has to build his crossing right.

I think an expression from this meeting to the effect that we ought to continue the agitation and that the members of this Association through their General Managers and their Legal Departments ought to continue to seek Legislation that will compel good and safe crossings, both for high tension wires, and other wire crossings.

Of course, you can make this expression as strong as you like. In fact, I think the stronger it is the better it will be. I think this would have a great deal of effect, when the matter comes up for adjustment before the Commission of any State.

We know what we want. There is not a Superintendent of Telegraph here, who is in charge of construction, but who knows exactly what he wants in that line. If he had an expression of opinion from this Association, he could put the matter up to his Legal Department, or the General Manager.

I am certainly of the opinion that it is Legislation that we want.

Mr. Selden: The Legislature can certainly arrange for a high tension wire crossing, basing itself upon such information as it has.

Mr. Dailey: Leaving aside the question of Legislation altogether. Is it not important enough to have that matter determined, and for this Association to arive at a Standard to follow, even if we do not obtain Legislation. I am not inclined to agree with our Secretary that we can hold them up in all cases crossing private tracks. It seems to me that would depend upon where you are, and certain other conditions.

Even though we do not obtain Legislation I think we ought to determine upon some standard for those crossings.

I have no desire at all to mix up this convention in any technical parliamentary discussion, but I believe that a substitute for the whole thing would simplify matters. I, therefore, offer as a substitute, the following motion:

That a Committee be appointed to determine upon a standard crossing, for high voltage wires and other wires, and to obtain such Legislation as they are able to obtain in the various States which have no Legislation on the subject at the present time.

Mr. Chenery: I think that is a very good idea of Mr. Dailey. It simplifies the matter a great deal, and I have much pleasure in seconding his motion.

Mr. Van Etten: Is not that the same as the original motion?

Mr. Dailey: Not exactly.

Mr. Van Etten: I would suggest that the Committee be instructed to confer with the electric light companies, the power companies, and the street railway companies who have an organization.

Mr. Dailey: Of course, the Committee would have power to do that.

Mr. Dailey's motion being put to the Meeting is declared carried.

The President: We have now almost completed our programme. About the only thing that remains for us to do is to receive the report of the Committee on resolutions of acknowledgment. Mr. Taylor is Chairman of the Committee.

Mr. Taylor: The Committee appointed to draft resolutions of acknowledgment to the different interests which have contributed so largely to the success of this Meeting of our Association begs to report that the hearty thanks of this Association are due to the different concerns and interests which have contributed so largely to the success of this Meeting of our Association, a Meeting which has been one of special merit, and one of the most valuable and largely attended in its history.

We wish to express our thorough appreciation of the entertainment which has been afforded to the members of the Association, and the ladies accompanying them.

The hearty thanks of this Association are due to the following interests:

Canadian Pacific Railway Company.

Grand Trunk Railway Company.

Pullman Palace Car Company.

Richelieu and Ontario Navigation Company.

Quebec Railway, Light and Power Company.

Montreal Street Railway Company.

Great North Western and Western Union Telegraph Companies.

Canadian Pacific and Postal Telegraph Companies.

American Telephone and Telegraph Company.

Bell Telephone Company of Canada.

Mr. Charles R. Hosmer.

On behalf of the Committee on Acknowledgments, I move that this report be received and adopted.

This motion being duly seconded by Mr. Cellar, was carried unanimously.

The Secretary: I would like to call your attention to the fact that the Committee to be appointed in reference to the Wire Crossings has not been named.

Mr. Davis: If I am not entirely out of order I would like to move that Mr. Cellar be appointed Chairman of the Committee.

This motion was duly seconded by Mr. Williams and carried.

The President: Are there any other suggestions as to who shall form the Committee?

Mr. Chenery: I would suggest that Mr. Groce of the Illinois Central be appointed a member of the Committee.

Mr. Rhoads: And I would suggest that Mr. C. H. Bristol be also appointed a member of the Committee.

Mr. Williams: I would suggest that Mr. Millington be appointed a member of the Committee.

The President: Mr. Dailey is Vice-President of this Association, and if he has not any more work to do in connection with that office than I had, I think he could very well afford the time to serve upon the Committee.

If there is no objection I will therefore appoint the following gentlemen as members of the Committee: Messers. G. A. Cellar, Chairman, G. H. Groce, G. W. Dailey, C. H. Bristol, E. H. Millington.

Mr. Chenery: It has been suggested that most of these members are from the West. I would, therefore, like to suggest that Mr. Selden's name be added to that Committee.

Mr. Williams: Inasmuch as this is a Railroad proposition I would move that Mr .Selden's name be substituted for Mr. Bristol's.

The President: Is it your desire that I should replace Mr. Bristol by Mr. Selden on that Committee?

Mr. Van Etten: I think we may take it for granted that even though Mr. Bristol were not on the Committe that he would be only too happy to give the members of the Committee any information in his power.

Mr. Selden's name was then substituted for Mr. Bristol's as a member of the Committee.

The President: I think that completes the business before the Association.

Before we adjourn I wish to extend my thanks to the members of the Association, Active, Associate and Honorary for the help they have given me in making this session a success, which I think it has been.

There is another matter which I would like to mention as a final word in connection with our Twenty-seventh Annual Convention, and that is a word of appreciation in regard to the delicate compliment which has been paid us

in the matter of our badges. Our worthy Secretary recognized the fact that we were British subjects on this side of the line, and had a badge prepared showing the face of the best Sovereign in the world, and his Royal Consort.

On behalf of the Canadian members of the Association, I wish to say that we appreciate this delicate compliment very much.

Mr. Williams: Seeing that there is no further business before us, I would move that the Convention be now declared closed, to meet again in the City of Detroit, at the call of the President.

This motion being duly seconded, was carried.

And the Convention thereafter adjourned.

(Mr. Fowle's paper was not prepared in time for insertion in the Minutes. The topic is "High Tension Wire Crossings." It is expected it will be printed in pamphlet form and copiously illustrated).

EXHIBITS AND EXHIBITORS.

The Western Electric Company had on exhibition a complete line of telephone equipment for use in railway service. This included special transmitter arms to be used in connection with train dispatching, besides other telephone equipment for use in conjunction with such service. Then there was a full line of composite telephones, such as wall sets, portable sets and line poles; also weather-proof wire pole telephone sets, besides portable car sets for regular telephone lines. In addition to this a complete collection of telegraph equipment was displayed. The Gill and Burlington selectors, both of which are sold by this company, and which were included in the display, were shown in operation. A very attractive feature of this exhibit was a large artistic sign beautifully decorated with small flags of all nations, showing the countries where Western Electric apparatus is used. The Western Electric Company was represented by W. E. Harkness, sales engineer, and M. E. Launbranch, engineer, of New York; C. L. Howk and H. C. Currier, engineers, of Chicago.

The United States Electric Company, of New York, gave its exhibition in connection with that of the Western Electric Company, showing the most recent adaptations of the Gill selector to the telephone in train despatching. It consisted of an entire telephone selective apparatus for a dispatcher's office and the associated station equipments. This outfit, which is the one now in actual use on the New York Central, Canadian Pacific, Lake Shore and Michigan Southern, and several other railroads, is so arranged that the dispatcher can call automatically any station at will on the circuit and get an automatic answer back in seven seconds. A further exhibit was made of the Gill selector showing its adaptation to high speed multiple calling. This comprised twenty-four station equipments with a train

dispatcher's automatic calling device, consisting of a case containing twenty-four push buttons and an automatic signal call box to operate the same. The dispatcher, when calling, first presses the buttons corresponding to the station or stations he wishes to call, the automatic signal is then set in motion and any or all stations desired are called by one operation. By this method any one of the stations can be called in from one to six seconds, and all of the 24 stations can be called in 18 seconds. This method recommends itself particularly wherever it is desirable to call several stations together to issue train orders. This company was represented at the convention by Edwin R. Gill, the inventor of the Gill selectors; Harrison Osborne, secretary, and Howard E. Merrell, the general manager.

The exhibit of the Stromberg-Carlson Telephone Manufacturing Company, of Rochester, N. Y., presented a well-arranged operating display of their selective alarm telephone dispatching system. The apparatus for a complete dispatcher's office located on one side of the room was connected up as in regular practice with five complete equipments representing local stations as placed on a division of a railroad of any length. A feature that was not instantly appreciated by visitors unfamiliar with this equipment was that this system operated its selectors on a common battery circuit, requiring a pressure of only .15 of an ampere. The telephone instruments shown with this particular selective equipment were of the local battery type as recommended for this service. This system embraces a telephone line and has superimposed on this line selective devices in a manner similar to the application of telegraph signals of the simplex type, provisions being made for applying the signaling mechanism and operating the same without interference with the telephone conversations.

The Stromberg-Carlson Company was represented at the

convention by H. C. Slemin, S. R. Wright, Charles E. Hague and E. C. Lewis.

The Sandwich Electric Company, of Sandwich, Ill., was represented by H. O. Rugh and J. A. Rugh. Their demonstration consisted of the well-known Sandwich telegraphone, with telephone train dispatching equipment, operating in conjunction with the No. 2 Sandwich selector. The important feature of maintaining a means of communication during circuit failure was efficiently demonstrated and met with general approval.

Mr. J. J. Ghegan, president of J. H. Bunnell & Co., Inc., of New York, manufacturers of telegraph apparatus and appliances, dry batteries, etc., distributed a beautiful souvenir book of views of Montreal, which was very acceptable to the visitors and one which will be preserved as a memento of their trip to the Canadian metropolis. Mr. Ghegan expressed himself as delighted with his visit, which enabled him to renew many pleasant friendships as well as to acquire a number of new ones.

The Railroad Supply Company, of Chicago, was represented by Mr. E. W. Vogel, signal engineer. The company had a very interesting exhibit of the Chicago crossing signal. The exhibit shown by Mr. Vogel was a miniature signal, complete in all its details and equipped with a Chicago automatic cut-out, which makes it entirely practical to install track-circuit crossing alarms at crossings adjacent to stations. By the use of this device the alarm will not ring unnecessarily and thus make a nuisance of itself when locals are standing on the track-circuit doing switching or other work. The company also exhibited its line of lightning arresters, styles A, B and C, which are of the choke-coil pattern and which are designed to be put in series with the instruments to be protected. These arresters are furnished with or without fuse. The company also had on

exhibition a new style of lightning arrester, which is termed the style F arrester. This arrester is entirely new in principle and embodies several advantageous features. The arrester is so designed that all parts are in plain view and can be instantly taken apart for inspection without opening or grounding any lines. The arresters are mounted upon slate or porcelain bases, and as they are equipped for use with or without fuse, it is entirely practical to use same in series or in multiple.

Mr. Richard D. Brixey, son of, and general manager for W. R. Brixey, New York, manufacturer of the well known Kerite wires, was present at the convention, accompanied by Percy W. Miller of his office. Mr. J. V. Watson, president of the Watson Insulated Wire Company, of Chicago, the Western representative of the Brixey concern, was also present.

Mr. John Langan, of the Okonite Company, New York, manufacturer of the well known wires, tape, etc., bearing that name, was in attendance at the convention, as is his habit.

The L. M. Ericsson Telephone Manufacturing Company, Buffalo, N. Y., represented by L. M. and T. S. Hemenway, made an excellent display in their exhibit, which embraced a full line of the products of their manufacture.

Another exhibit was that of the Homer Roberts Telephone Company, of Chicago, in which the special features known as the "Roberts System," a development of that company, received attention.

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